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MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

RESHAPING THE L.M.R. FREIGHT SYSTEM

See Page 3

VOL. LXXX No. 2080 [*Registered at the G.P.O. as a newspaper*] LONDON, FEBRUARY 7, 1959 PRICE NINEPENCE

CURRENT TOPICS

Seventy-Five Years After

NORMALLY austere rooms in the headquarters building of the British Transport Commission are always transformed with flowers for the annual conversazione of the Permanent Way Institution and this year the arrangement, achieved as Sir John Elliot remarked through the agency of London Transport, evoked particular praise from the many members and guests present with their ladies on January 31. The president of the Institution, Mr. C. E. Dunton, who took up his office at the beginning of the year, recalled that it had been 75 years ago, on January 5, 1884, that the inaugural meeting had been held in Nottingham of the Institution of Permanent Way Inspectors, as the body was originally titled. The first president, Mr. Meredith, had laid down very clearly the aims in his first speech, which was so good as to bear repetition. The points included the holding of social functions, which was exactly what they were doing, the conduct of an examination and the award of a certificate to those who passed successfully, and that commendable practice had been followed to the present day, as had the maintenance of a benevolent fund. It could be wished so far as the latter was concerned that more use was made of it, but then, fortunately, the circumstances of members had improved since then.

Practice Ahead of Theory

WHAT had not altered was the importance of the engineer and particularly of the permanent way man to the railway. Now, as then, there was the widespread desire of them all to know their job and to do it well. Practice still kept ahead of theory. The railways still could not be beaten and if there was room for improvement the only one he could suggest was the elimination of the idea that when a train was late it did not matter what happened to it. The guest of honour was Sir John Elliot, chairman of the London Transport Executive. Speaking on a serious note, he emphasised that there was still no method of moving people and things as efficiently and cheaply as the railway; with the modernisation of British Railways there had never been such an opportunity as there was today. Expressing the thanks of the large company to Sir John Elliot, Sir Landale Train, a past-president, said that Sir John might pretend to know little about engineering but that was not so. He had worked closely with him for a number of years and knew how good a friend he was to the engineer and how wide was his grasp of what was involved. He went on to pay a tribute to the late Mr. J. W. Watkins, who had been at the last conversazione. After the speeches the guests, as usual, danced, attended exhibitions of B.T.C. films, took part in games of snooker and darts and, as is right on such occasions, talked about everything from railways back to railways.

Searchlight on Rail Reorganisation

REMINDING his audience of the British Transport Commission's dictum in the White Paper of 1954—that organisation is a means to an end and not an end in itself—Mr. G. F. Fiennes this week gave the Metropolitan Section of the Institute of Transport an impartial survey of the new set-up in the Eastern Region of British Railways on which he holds the important post of line traffic manager (Great Northern). His address is reported on page 7. He reminded his audience of the devolution of a large degree of central authority over the railways through the medium of area boards, which the same statement referred to as "policy forming at area level and supervisory" but not intended as executive organs of day-to-day management, for which the regional general manager and his departmental officers would be responsible. An interesting development since then has been the reorganisation within the regions, of which the Eastern Region was the pioneer in fusing the commercial, motive power and operating functions within a traffic department with the appointment of three line and seven district traffic managers controlling functional officers. The latter have been relieved of duties, such as staff and works, not related to their particular functions, and the commercial officer becomes purely a sales officer by the transfer to the operating officer of cartage and terminal handling, to whom they properly belong. This re-arrangement, together with certain geographical adjustments between the regions, has in a year resulted in much greater efficiency and economy, particularly in the Sheffield area, which Mr. Fiennes quoted as an example. There are, however, some disadvantages—surprising if there were not—and he believes that in the not too distant future departmental organisation may again come into its own, thereby confirming another B.T.C. dictum, that "organisation is a live thing, constantly changing." Meanwhile he poses the query as to where to find future operating officers "with knowledge of passenger, freight, works, staff and, above all, safety of the line." This surely should not be beyond the capacity of the Commission. If, as he suggested, modernisation will almost completely conquer fog the prospects for railways as the only reliable all-weather means of transport are distinctly bright.

Modernisation Should Extend to Methods

NO chances are being missed by the railways to encourage the sales effort and to improve methods generally. This month's "Man on the Line" feature in *British Railways Magazine* is concerned with what it calls "last year mentality." Experience, it agrees, must always play a part in the running of the railways as in running any business, but it is folly to adopt the lazy man's way out and do automatically "what we did last year." The attitude should be "let's see if we could do better." Is the demand the same? Was the service the best, quickest and most convenient we could give? Was the price right? What competition were we up against, and what are we up against now? "The answers to these and other relevant questions, plus previous experience, may still result in our doing what we did last year. On the other hand they may result in our doing something quite different and very much better." It quotes with approval a pertinent point made by a signalman in the Scottish Region: "Essential as the modernisation of equipment and services is, it appears to me that far too little is being heard about having our approach to the public modernised so as to ensure an improvement in goodwill. Without that all efforts will be in vain."

Justifying a New Railway

HOW, in these difficult times, does one set about the preparation of a convincing case for a new railway? The answer came from Sir Ralf Emerson, chairman of the Nigerian Railway Corporation, in an address to the Institute of Transport at last Tuesday's informal luncheon, with the president of the Institute, Major-General G. N. Russell, in the chair. It concerned a scheme for a new railway in the north-east of Nigeria, which would add approximately 400 miles of single line to the existing system consisting of 1,780 route miles of 3 ft. 6 in. gauge single track. Following traffic and other surveys an approach was made by H.M. Government to the World Bank, and to Washington went a small party from Nigeria to discuss the project. "Why do you favour opening up this territory by rail rather than by road or water?" was one of the penetrating questions asked by the technical staff of the Bank. The question of water was easily disposed of, leaving a straight fight between road and rail. On the basis of data described by Sir Ralf, the capital cost of the railway was estimated at £19.4 million, interest charges being calculated at 5¼ per cent, on which basis it was judged that operation of the extension would break even in the sixth year after opening. With similar interest charges the total capital cost for road operation (roads of a type already existed) was reckoned at £9.6 million, resulting in an annual operating loss, in the sixth year after opening, of over £500,000 after, as in the case of the proposed railway, paying all charges, including interest and depreciation. The astute men of the World Bank, used to assessing this type of problem the world over, "accepted our conclusions without one word of comment," said Sir Ralf, whose address will be fully reported in our next issue.

Rail Responsibility for Road Bridges

THEIR inherited liability for the maintenance of level crossings and road overbridges has long been a sore point with the railways, and indeed with the highway authorities, for in most cases railway responsibility is confined to conditions ruling when the railway was built. Ministerial attention has frequently been drawn by the B.T.C. to this anachronism, the issue having last arisen during the protracted negotiations for the settlement of the railway wages dispute last May. The Government on this occasion recognised the need to accelerate modernisation of bridges and crossings and undertook to examine the Commission's maintenance obligations. In a written reply to a question in the House of Commons last Monday the Minister of Transport confirmed the Government's agreement that relief was justified. This, however, gave rise to a number of complicated issues, he said, and to change the present arrangements would require legislation. Meanwhile the Government proposed as an interim measure to make a payment of £1 million for the second half of 1958 and of £2 million in 1959. Parliamentary authority for the payment of £1 million this financial year is being sought by supplementary estimates. The Commission will no doubt look forward to the promised legislation as a permanent solution.

British Computers Go International

WORLD markets are the objective behind the merger, consummated last week, between the British Tabulating Machine Co., Limited, and Powers-Samas Accounting Machines, Limited. The new company, International Computers and Tabulators, Limited (the directors hope that its title will soon become recognisable in the initials I.C.T.), will, it is hoped, compete successfully in any market with any other country in the world in machines for accounting, statistical, management and production control problems. The integrated range of equipment will be more diverse and wider in capacity than that available from any other existing source. B.T.M., renting Hollerith equipment, was born in 1907, which means that tabulators at least were with us while the typewriter was regarded as new-fangled office equipment; Powers-Samas traces its origins back 43 years. The curious "second half" derives from the absorption in 1929 of a French company, Société Anonyme des Machines à Statistiques. Since 1955 Powers-Samas had been a wholly-owned subsidiary of Vickers, Limited. I.C.T. disposes of assets valued at nearly £24 million, employs 16,000 people and will have 1,750,000 sq. ft. of production space at work. Both elements in the merger have invested heavily in research and both have the advantage, by virtue of associations, of specialist electronic development carried on by giants in that field; B.T.M. was associated with G.E.C. and Powers-Samas with Ferranti. After these portentous developments it will be a comfort no doubt to many to learn that the day of the punched card is thought to be by no means over.

Lessons from the Preston By-pass

OPPORTUNITY was taken by the Minister of Transport at the opening of the B.R.F. Town Roads Exhibition (see leading article on page 2) to excuse the temporary closure of the Preston by-pass motorway in view of an "almost unique combination of bad weather" which had caused minor damage to the carriageway. It was felt that in view of traffic speeds it was vital that the motorway must be closed while the repairs were effected; the damage would not have called for such an interruption to traffic had it occurred on a road in ordinary use. It seems to have been overlooked in the anxiety to make an outcry about this incident that a motorway is very similar to any other ordinary highway in construction. Other new roads have had teething troubles, either in the surface or the foundations and, indeed, they have not been unknown to railway civil engineering. As to the "ordinariness" of motorways, it is worth remembering that the dimensions of our Southend arterial road were copied for the original German autobahn. It was the use and the layout at junctions that were different. As to waiting for the weather, the Minister stoutly suggested it was ridiculous. Frost damage had occurred on roads in Germany and the U.S.A. on a much wider scale. Mr. Watkinson fully supported the course taken by the contractor and the road building authority in going steadily forward with construction through all the difficulties that presented themselves. The lessons to be learned will be studied with care—but they are hardly likely to be major ones.

LEADING FEATURES IN THIS ISSUE

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BRITISH RAILWAYS

MODERN TRANSPORT

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publication bearing somewhat similar titles.

★

Town Roads

WITH its usual enterprise and vigour the British Road Federation has arranged an important exhibition, "Town Roads for Today and Tomorrow" in the Great Hall of the headquarters building of the Institution of Civil Engineers. Opened by the Minister of Transport on January 28, it unfortunately closes today, February 7. Besides drawings and reports from a large number of cities made available to students, the catalogue lists 47 places of which models, photographs and drawings are displayed with brief details of the plans now proposed or in course of execution. Traffic congestion in our towns springs from conflict—conflict between pedestrian and vehicle; between local and through traffic; between parked and moving vehicles; and between opposing traffic streams at intersections, says Lord Derwent in the introduction to the catalogue. Much of this conflict can be resolved by making better use of the roads we have and by imaginative new construction schemes. Measures taken at home and abroad are displayed as examples of the ingenuity with which the traffic congestion problem is being tackled. Parking problems and the provision of offstreet parking facilities were excluded from the exhibition—but no doubt can form the subject of another display in due time. In the meantime, albeit at a cost, but not necessarily as great a cost as enduring the inconvenience and losses of jams unending, solutions can be found for every type of problem. The cost of congestion will mount as vehicles grow in numbers and the British Road Federation has underlined the need for "three-dimensional thinking" by engineers, architects and planners to be turned into reality.

A Firm Foundation

OPENING the exhibition, Mr. Harold Watkinson pointed with some satisfaction to the fact that over the last four years, "while things were being planned rather than built, our average expenditure on major improvements and new construction was £12 million. This year, as plans come to fruition and we move into the phase of real progress, we shall spend over £40 million. Next year it will be over £50 million, the year after over £60 million. And after that we mean it to go on, planning for a rate of not less than £60 million a year," he declared. "This extension beyond the present four-year road programme is, of course, of vital importance to my Ministry and to local authorities, for it means that they now have a firm foundation for forward-looking planning for the longer-term future. This is an important new development in the road programme." No matter what the difficulties, and he foresaw special difficulty in dealing with urban road problems, the phrase attributed to the builder of Seville Cathedral—"let us set our hands to such work that they who come after us, when they behold it, shall say that we were mad to have attempted it"—must be the spirit of those who build Britain's new road system. In that, we may remark, they will be no different from their distinguished predecessors who took canals through the Pennines and other difficult terrain in the 18th century, painfully, with no previous experience as guide, with crude tools and nought but manual labour, but in the end successfully. And who today can but marvel at the courage of Joseph Mitchell in planning the Highland main line at a height of 1,480 ft. across the bleak massif of the Grampians as long ago as 1845?

Roads Must Fit Background

THE Minister reminded his Great George Street audience (some of whom received his speech on closed circuit television) that no country had been able to say it had solved the urban road problem, which faced all the big cities of the Western World. In this very densely developed country we have a task of particular difficulty in view of our great regard for historic associations worthy of preservation. Buildings or places of such a nature often stand in the way of some modern utilitarian construction, but apart from their intrinsic value to our own posterity the aspect of their tourist attraction must also be given consideration. The new urban roads must fit with the general backgrounds; the best available advice must be used in designing these features of the "townscape," to use a Ministerial phrase. In our view, far too many planners have inveighed against the aesthetic harm done to the community by the railway viaducts of South London only to turn immediately to hideous overhead concrete road structures as a means of solving their own highway problems. Although the urban motorway has now been acknowledged by the Ministry of Transport as a possibility, the Minister refrains from embracing the idea wholeheartedly. American experience, he said, had been of schemes costing nearly £4 million a mile on average; for particular parts of motorway schemes in this country the Ministry calculates a cost of as much as £5 million a mile. He could not entertain the thought of a motorway in the City of London, where the costs would be at figures appropriate to space travel. Who now can point an accusing finger at the modest permanent way expenditure of the railway modernisation scheme? As roads cannot be spread over indefinite areas they have to serve two purposes, some like Route 11 in the City of London with parking space under the carriageway and others, such as the South Wales road, on top of the Great West Road, or, in the Birmingham area, a double-deck structure of road over railway between Smethwick and Oldbury and on the circumferential motorway round Birmingham, over a culverted stream.

Hammersmith Flyover at Last

SPECIAL interest attaches to a last-minute exhibit at the Institution of Civil Engineers—a model of the proposed flyover at Hammersmith, which the London County Council Town Planning Committee has approved and submitted to the meeting of the L.C.C. on February 3. The work is estimated to cost £1,201,000 and will be half a mile long; it will join the extension of Cromwell Road into Great Church Lane with the Hammersmith and Chiswick section of the Great West Road and will cross Fulham Palace Road and Hammersmith Bridge Road with a clearance of 16 ft. 6 in. The two carriageways will be 24 ft. wide and the overall width 61 ft. It will be constructed in prestressed concrete and between the approach ramps will be cantilevered out from 13 single supporting columns spaced up to 140 ft. apart. This design will economise on land acquisition for rearranging the ground level road layout. A 50 per cent improvement in the capacity of the Hammersmith Broadway intersection is anticipated and among amenities will be subsurface electric heating on the ramps to prevent icing. It is estimated that it can be built in 21 months from the start.

What About the Metropolis?

IT is certainly strange that so long should have elapsed since mid-Victorian activity on road schemes in Central London; these included Queen Victoria Street and the Victoria Embankment, Charing Cross Road and Shaftesbury Avenue, as well as taking advantage of a difference in levels to create Holborn Viaduct, the very pattern of a flyover scheme, giving free passage to north and south traffic on Farringdon Street. This activity petered out with Kingsway and Aldwych, despite the schemes put before the Royal Commission on London Traffic in 1905 for extensive tramway tunnels and the Commission's advocacy of two new thoroughfares—Bayswater via Russell Square and Liverpool Street to Aldgate and Holloway via Caledonian Road and a new Thames bridge near the Temple to Elephant and Castle—intersecting near the mid-point of Gray's Inn Road. What a boon those great avenues would be today! In the meantime we must be glad that under Mr. Harold Watkinson's Ministry underpasses or flyovers are in hand at the Western Avenue—North Circular Road junction, the North Circular Road—Great West Road junction at Chiswick, the Ace of Spades crossing on the Kingston Bypass, Hyde Park Corner and the northern debouchement of Blackwall Tunnel. The hibernation during the fifty formative years of the motor era nevertheless leaves a lot of leeway to be made up, not only in London but in the other great cities.

[Forthcoming Events appear on page 14]

COMPLETE RESHAPING OF L.M.R. FREIGHT SYSTEM

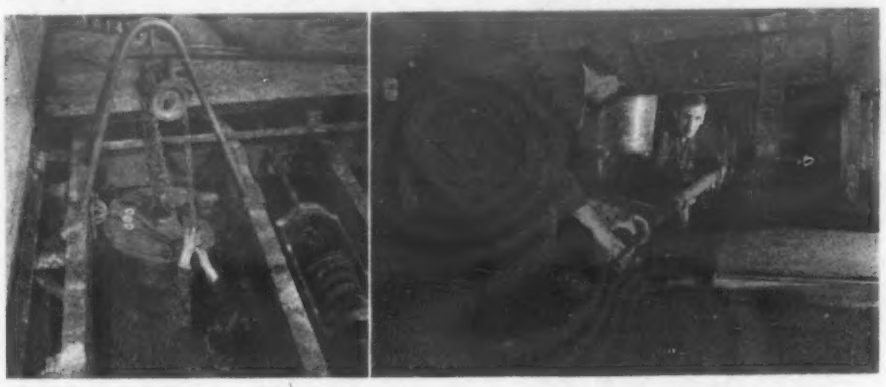
Quick Results Looked For

FEWER DEPOTS AND MARSHALLING YARDS

OVER the next three to four years the London Midland Region is to pursue a vigorous programme of concentration and modernisation of its freight facilities. The object is speedily and radically to increase the efficiency of the freight service so that it may attain a position quite quickly not only to get new business but also to win back business that it believes rightfully belongs to rail, particularly in the general merchandise field. The London Midland Region derives two-thirds of its business, or about £110 million, from freight traffic. This represents about one-third of all British Railways freight traffic. The keynote will be, to quote the words of Mr. David Blee, general manager, "new standards of service and reliability on which our sales force will be able to act with complete confidence."

The quick-results scheme now decided upon may cost £25 million. Authorisation was made only at the end of 1958, but already contracts are in hand. Mr. Blee said it was conceivable that in a hustle of this character some miscalculations would result, but they believed that it was better to hurry now rather than to risk further loss of traffic while long-term plans were evolved down to the last detail.

This is a plan involving a large number of separate and important projects and it is designed to streamline the whole of the freight traffic system in order considerably to speed up both the movement and handling of traffic, and thus to produce a more economical and really reliable service. Expenditure in 1959 may total some £5¼ million.



Fitting of continuous brakes to L.M.R. rail wagons, an essential prerequisite to fast running of freight trains, is now running at the rate of 300 per week. On the left a vacuum cylinder is being lifted into position; right, a brake cross-shaft is fitted

More Overnight Freight

A start has already been made in regard to the speeding up of the movement of traffic by the introduction of overnight express freight trains of which there are now approximately 600, a large percentage of which can be found in the published timetable, and the number of these trains is being increased just as fast as wagons can be fitted with vacuum brakes. Furthermore, over 80 per cent of these express trains are keeping regularly to within half an hour of their scheduled timetable.

Another way in which it is intended to speed up the movement of freight trains is by the introduction of diesel locomotives. The rate of introduction of such locomotives, which will include both 2,500-h.p. type and the 1,160 to 1,250-h.p. type, is to be greatly increased. It is considered that any freight or passenger train operated on the region can be hauled by locomotives of one or other of these types.

Handling of Sundries Traffic

Of greater significance are far-reaching schemes for the reduction in the number of freight terminals and marshalling yards as well as the modernisation of a number of depots and marshalling yards. This form of concentration would allow for traffic to pass predominantly between main centres and thus save a great deal of time.

Considering first sundries traffic, London Midland Region depots dealing with this traffic total 170 at the moment. By the terms of the new plan these depots will be reduced to no more than 48 and from the accompanying diagram an indication of exactly how this operation will be phased may be gained. The modernisation of 10 of these 48 terminals will thus be completed by the end of this year.

Secondly, marshalling yards: the plan provides for the reduction of marshalling yards from the present figure of 111 to 46, the object here being to eliminate or reduce the handling of wagons (which in itself will do much to obviate the danger of damage to traffic in transit) and the provision of direct terminal to terminal services.

The plan has been considered in relation to the requirements of the sundries terminals as well as to the full load and coal concentration plans, and is based upon the establishment of a limited number of main trunk yards; the provision of smaller satellite yards feeding into and out of the trunk yards, and the need to reduce the handling of wagons with a speed-up in transit time as well as a reduction in the number of staff employed. In addition to this the major yards will be equipped with modern signalling and up-to-date communication systems (including radio communication with shunting engines).

Apart from all this it is proposed to start straight away to concentrate parcels traffic at six centres, i.e. Birmingham, Leicester, Liverpool, London, Manchester and Nottingham, which will not only reduce handling and operating costs but also remove the mass of parcels from passenger station platforms. More than 90 per cent of the parcels traffic in this region originates in the six centres indicated. Other projects include:

(i) The equipping of depots with suitable transfer appliances to deal particularly with container traffic and container trade developments generally.
(ii) The mechanisation of warehouse facilities.
(iii) The reduction of private sidings.

Door-to-Door Service

An integral feature of the scheme, one by which, it is believed, its value will be greatly enhanced, is door-to-door service. There is already in force a zonal system of railheads whereby traffic from railheads and sub-railheads in a specific area is now delivered to the customer's door direct from the railhead or sub-railhead by railway motor vehicles, thus cutting out the delay of having to sort out wagons for onward transit to local stations. As a

(*Continued on page* 14)

APPROVED MARSHALLING YARD SCHEMES

CARLISLE (NEW YARD) will result in the closure as marshalling machines of the following:

Kingmoor Up Sidings.	Upperby.
Kingmoor Down Sidings.	Durran Hall South Sidings.
Viaduct Yard.	Petteril Bridge.
Canal.	Currock.

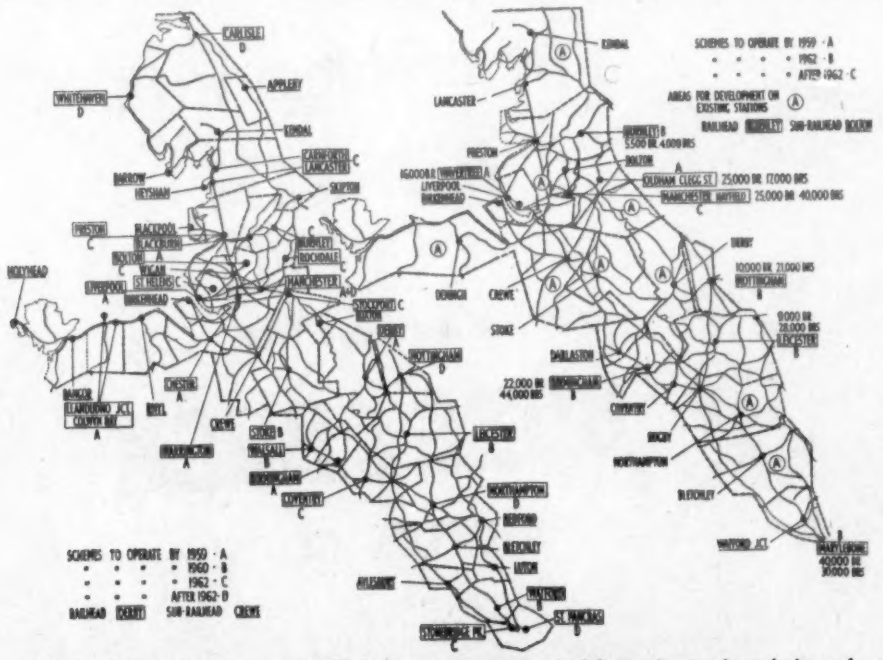
CREWE (BASFORD HALL DOWN) (Remodelling). The following yards will be closed as marshalling machines:

Crewe North Stafford	Chatterley.
Down Sidings.	Alsager.

BESCOT (Remodelling). The following yards will be closed as marshalling machines:

Bushbury Up Sidings.	Stechford Down Sidings.
Bushbury Down Sidings.	Wichnor.
Stechford Up Sidings.	Birmingham (Exchange Sidings).

ADSWOOD (Remodelling). Edgeley will be closed as a marshalling machine.



Diagrams illustrating the new L.M.R. freight proposals. On the left are the area boundaries and terminals for freight sundries, and, right, similar details of the parcels scheme. Co-ordination with B.R.S. is anticipated at centres marked with daily numbers of B.R. and B.R.S. parcels

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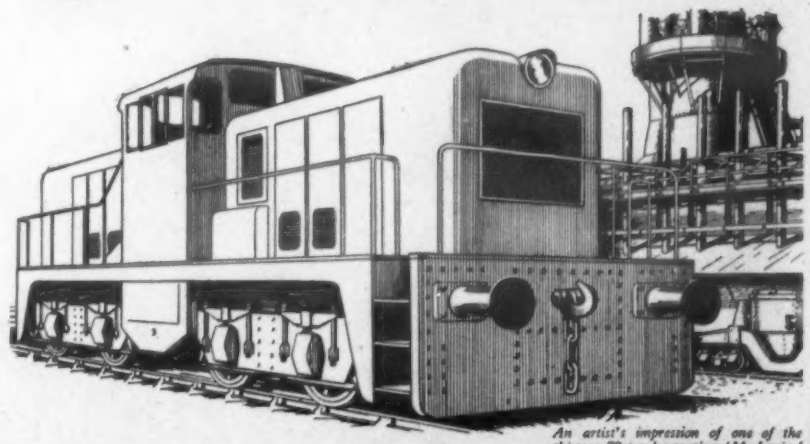
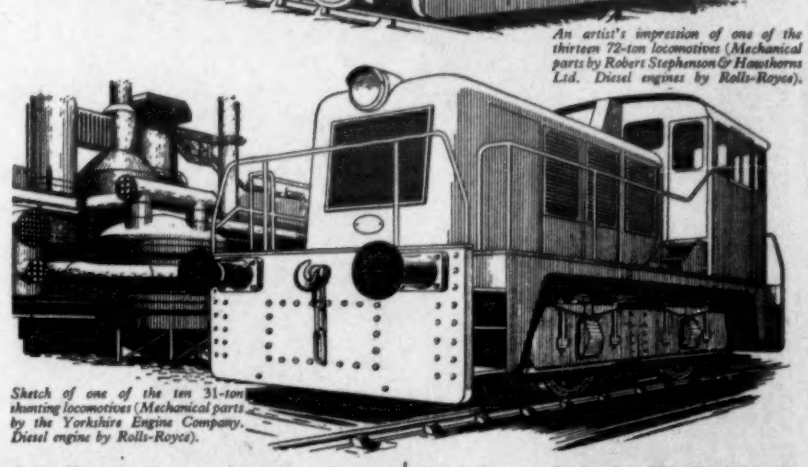


An artist's impression of one of the thirteen 72-ton locomotives (Mechanical parts by Robert Stephenson & Hawthorns Ltd. Diesel engines by Rolls-Royce).



Sketch of one of the ten 31-ton shunting locomotives (Mechanical parts by the Yorkshire Engine Company. Diesel engine by Rolls-Royce).

British Thomson-Houston, as a constituent Company of the Indian Steelworks Construction Company (ISCON), has in hand orders for a total of 23 diesel-electric locomotives for use in the Government of India's Durgapur Steelworks. The electrical equipment of the thirteen 72-ton Bo-Bo units and ten 31-ton 0-4-0 units will be of BTH design and construction throughout.

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LORRY—BUS—COACH

Sunderland May Try Bonus Scheme

INTRODUCTION of a group bonus scheme for the department's transport staff is recommended by Sunderland Transport Committee with the object of stimulating interest in the successful operation of the bus services. The scheme, to be based upon the number of passengers carried per man-hour, will not be related to individual takings, but on the total number of passengers carried by the department, so that there will be no competition between crews. Mr. N. Morton, general manager of the undertaking, said he believed the plan would encourage conductors to watch for empty seats, keep an eye on passengers running for buses, ensure that all fares were collected, and in general cause an extra effort to be made. The proposal is to be submitted to the National Joint Industrial Council and, if approved, will operate for an experimental period of 12 months.

Continental Touring Habit Sticks

NEARLY everyone who took the opportunity of going abroad by coach to sample the beauties of the Continent, having ventured once, wished to go again and again, Mr. B. Goodfellow, general manager of Sheffield United Tours, Limited, told Omnibus Society members at a Sheffield film show and talk.

Midweek Coach Fares for Pensioners

TWO Bradford coach operators—Wallace Arnold Tours, Limited, and Feather Bros. (Tours), Limited—are applying to the Yorkshire area Traffic Commissioners to reduce fares by 33⅓ per cent to popular seaside resorts next summer for old-age pensioners. They propose to operate the concession jointly on Monday to Friday only.

Railway Express Surprise in U.S.

BURDENED with passenger and parcel post revenue losses, the New York Central railroad in the U.S. has decided to withdraw from the Railway Express Agency as from January 1, 1960, and use the money saved to bolster its passenger revenue. Railway Express is owned by 68 railroad companies, but the New York Central, with a 14 per cent holding, is the largest single stockholder. Other eastern lines are believed to be considering similar action because they believe they subsidise western and southern lines using Railway Express. Some favour handing over less-than-truckload traffic for consolidation by freight forwarders. In 1956 Railway Express costs exceeded revenue by $60 million.

False Variation of SA-Licence

IN a written judgment the Transport Tribunal has upheld the decision of the East Midland area Licensing Authority to revoke a special A-licence held by Mr. S. L. Harness in respect of one vehicle. The licence holder, having exchanged the original vehicle, did not apply for the variation of the licence, but hired the substituted vehicle out without a licence. Next, he was persuaded to seek a variation replacing the original vehicle (which he no longer had) by a third vehicle (which he never owned nor possessed) with the intention, says the Tribunal, that a special A-licence for this third vehicle could subsequently be procured by a third party. Certain statements made in support of this variation application were therefore untrue, the Tribunal finds.

Oxford Street Staggering Plan

THROUGH a working party, the Retail Distributors Association has evolved a plan, which is to be considered by its council in about one month's time for staggered closing hours in the stores of its members throughout, it is hoped, the length of Oxford Street, as a contribution to the travel problem. The proposal is that there should be a 5 p.m. closing on Tuesday, Wednesday and Friday, 7 p.m. closing on Monday and Thursday, and 1 p.m. on Saturday. There would be compensating time off for staff and no increase, therefore, in normal working hours. There would be an experimental period for trial, possibly in the latter half of September when traffic congestion rises after the holidays, but well in advance of Christmas.

A. and C. Wigmore, Dinnington, operates this Leyland Royal Tiger bus on its hourly service thence to Sheffield; right, Leyland Titan PD3/6 of Bury Corporation Transport. It is a 73-seater with platform doors

Manchester—Antwerp Meat Run

LAST week, a Leyland Comet articulated refrigerated van employed by meat contractors Louis C. Edwards and Sons (Manchester), Limited, inaugurated a weekly Manchester—Antwerp meat run. The 12-ton semi-trailer carried an 11-ton load of frozen sausages on its journey via the Tilbury—Antwerp ferry to the British Army cold stores at Antwerp. Normally the round journey from Manchester to Belgium and back should take only three days. The outfit is fitted with Frigidaire refrigeration plant. During transit this is powered by a 200-c.c. petrol engine which drives the compressor of the freezing plant and keeps the temperature of the sausages at a steady 22 deg. F. throughout the journey. When the vehicle is stationary the refrigerator plant is driven from the mains, and a special plug for this purpose is available on the Continental Line transport ferry for use during the voyage. The contract under which the sausages were delivered to Antwerp is operative for three months, and it is interesting to note that the shipping of the sausages to Belgium is not classed as an export order as the meat has been bought and paid for in this country by British consumers.

Big Rise in Larger C-Vehicles

BY the end of 1958, the total number of vehicles authorised under C-licences stood at 1,099,282, compared with 1,070,201 at the end of 1957 and 998,219 at the end of 1956. But since the end of 1953 the number of vehicles exceeding 3 tons in unladen weight has jumped from 56,379 to 91,416.

Nottingham May Use Computer

TO replace its punched-card equipment, which it has had since 1944, Nottingham City Transport is to hire new equipment which will include an electronic multiplier. The principal uses of the punched-card equipment have been for stores, wages, accounts, traffic statistics, ticket records, costing accounts, accident statistics, fuel oil averages and vehicle mileage statistics. It has been decided to hire the machines, so that if the transport department work should be merged with that of the projected electronic computer in the city treasurer's department, there will be no capital loss.

Halfpennies Reintroduced

CALCULATION of children's fares was disputed when Plymouth Joint Transport Committee applied to the Western area Traffic Commissioners, sitting at Bristol, for an increase of fares for services inside the city, and others outside, operated jointly by the City Transport Department and the Western and Southern National Omnibus companies. Mr. H. R. Haydon, deputy town clerk for Plymouth, making the application, said the extra revenue needed to meet losses was estimated at £49,350 for a full year. Of this amount £39,480 was needed by Plymouth Corporation and £9,870 by the company. Increases of a halfpenny were allowed on fares of 5d. and over (those under 5d. remaining unaltered) within the city circle. Through fares from the outer circle would also be affected. Another proposal was that children's fares should be half that of the adult fare, but that in rounding off on the halfpennies, a concession should be made to the children to the effect that farthings should be ignored in calculating the half fares and three-farthings made to count as halfpenny. Mr. S. W. Nelson, the chairman, said this could not be allowed. Here the corporation was introducing something new in the area, but it was illegal for a corporation to increase a concession. The children's fares must be rounded off at a halfpenny, thus half the adult 5½d. fare would be 3d. Halfpennies on the fares were formerly abandoned in this area in 1953.

Passenger Poll

INSPECTORS are asking passengers on Nottingham City Transport buses which they would prefer—an increase in fares or a decrease in the number of buses operating on the route. Another fare increase is almost certain in the near future—unless an alternative can be found. They are asking regular passengers on the buses.

Fares Adjusted in Gateshead

THE Northern area Traffic Commissioners have approved an application by the Gateshead and District Omnibus Co., Limited, to reduce the distance given for fares on certain of its routes in Gateshead and Felling. Only 53 out of 248 fare stages are involved, and the adjustments will bring in another £9,200 revenue per annum. The distance for a 2d. fare will be reduced from one mile to 0.9 mile.

Bus Station at Tredegar

IMPROVEMENT in transport facilities and amenities in Tredegar was inaugurated last week (January 30) with the official opening by Mr. Aneurin Bevan, M.P. for Ebbw Vale, of the Red and White Tredegar omnibus station and depot in Commercial Street. Out of a fleet of 500 vehicles owned by the company, 150 are operated from the Tredegar area, and a large number of these will be garaged at night in the new depot and bus station. It will also cater for express services, including those of Associated Motorways.

Manager Supported by Consultants

CONSULTANTS appointed some time ago by Bury Corporation have recommended the abolition of the post of chief clerk in the transport department and the amendment of the traffic superintendent position to that of deputy manager and traffic superintendent. They suggest also the complete reorganisation of the engineering section and reduced clerical work at the transport depot, with consequent reduction of foremen, but an increase in chargehands. They urge, too, that card punching should be done by another department, and estimate total savings would be £3,405. Much of this was recommended by the transport manager some time ago.

Bus and Coach Developments

Birch Brothers, Limited, proposes to use the London—Yorkshire Motorway for duplicate vehicles on its London—Bedford—Rushden service carrying passengers to or from Bedford and points north thereof.

The London Transport prototype double-deck Routemaster coach, CRL4, is now running on Green Line routes 715 or 715A between Hertford, Enfield, London (Marble Arch) and Guildford and between Hertford, Edmonton and London (Marble Arch) respectively.

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FOR OPERATION ON SAND

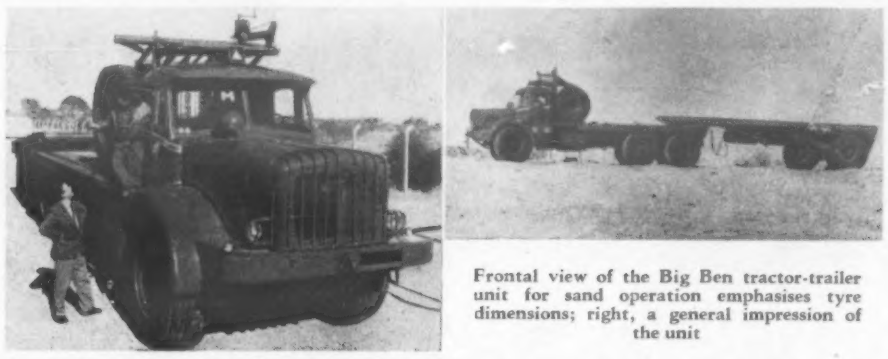
Thornycroft 60-Ton Gross Oilfield Unit

OILFIELD transport equipment—drilling rigs, pipe carriers, tankers, self-loading transporters—is already manufactured on a large scale by Transport Equipment (Thornycroft), Limited, at Basingstoke. The range has now been widened by the addition of a Sandmaster version of the Big Ben 200-b.h.p. load carrier or tractor unit, evolved with an eye on the shifting sands of North Africa. The Big Ben unit was given an unqualified approval in MODERN TRANSPORT of March 16, 1957, wherein both chassis and its performance were described in glowing terms. On that occasion a 36-ft. long load-carrying unit surmounted a 1-in-3 wet, loose-surfaced gradient on Bagshot Heath with power in reserve.

The lowest overall gear ratio (123 to 1 with auxiliary box) will be called upon to tackle other items of equipment to which attention is directed are the 60,000-lb. power-operated winch, the spare-wheel winch and gallows, available to either side of the vehicle and 10 cu. ft. tyre compressor. The cab of the Big Ben is an all-plastics structure, impregnated with colour undercoat to choice.

Load Ratings

Gross weight rating for this class of vehicle is 60 tons, the trailer load rating being 75,000 lb. These figures relate to hard road conditions, for which tyre pressure is 60 p.s.i. Tyre pressure may be reduced to 15 p.s.i. for conditions of maximum severity, i.e. on soft sand. Normally the tractor will be fitted with an S.A.E. fifth-wheel coupling for the semi-trailer but the tractor can be adapted to take the kingpin instead where it is desired to



Frontal view of the Big Ben tractor-trailer unit for sand operation emphasises tyre dimensions; right, a general impression of the unit

conditions in areas such as the Libyan Fezzan and Central Arabia. Now available for such terrain are French-manufactured Michelin giant sand tyres, size 18.00-25, 24-ply, and these, fitted on 15.00-25 four-piece wheels, earn the new model its title.

Power Assistance

The Sandmaster is available with a Hands-England oilfield flatbed trailer, a tandem-axled unit with similar tyre equipment carried on rocking beam suspension with inverted semi-elliptic springs. The general specification of the 21-ft. wheelbase tractor unit follows closely that of the existing Big Ben, i.e. the power unit is a Thornycroft six-cylinder turbocharged KRN6/S diesel model, developing a net 200 b.h.p. at 1,900 r.p.m. and driving through a power-assisted 18-in. clutch and four-speed main and three-speed auxiliary (splitter) gearboxes. There is independent engagement of front wheel drive. Hydraulic power assistance is applied to the steering system, in which the reaction valve is inserted in the steering column. Other specific use it in a dual role, i.e. as load carrier on occasion. In this case the kingpin is hydraulically retractable below the tractor platform.

Trailer Specification

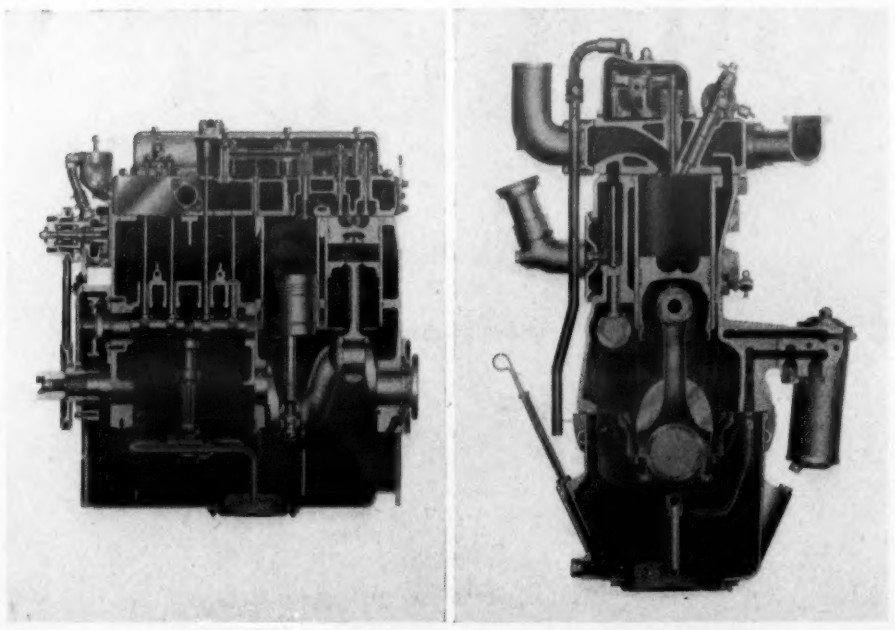
The 29-ft. long, 9 ft. 6 in. wide, semi-trailer, manufactured by Hands-England Oilfields Equipment, Limited, is equipped with the conventional nose cable sling for hoisting on to the back of the tractor and tail rollers. A 2-in. hardwood deck carries the load; stake sockets and lashing loops are supplied. The landing gear is retractable by hand operation. Loading is effected by the conventional means; the trailer may be uncoupled and the nose lowered to the ground if loading is to be from that end. After the load has been winched on to the trailer by means of the tractor power winch the trailer is hooked back on to the tractor by means of the winch. Loading may also be carried out with the aid of gin poles on the tractor, erected with the assistance of a headache rack behind the cab. An unexpected feature is that the tractor is equipped with flashing indicators, now obligatory in Libya!

Versatile Diesel Engine

PERKINS PRODUCES DIRECT-INJECTION UNIT

A NEW four-cylinder, direct-injection diesel engine—the Perkins Four 270D—for farm tractors, combine harvesters, boats and industrial equipment is announced by F. Perkins, Limited, which considers that direct injection has now been sufficiently developed in small bore engines for it to be successfully employed in this type of medium speed diesel power unit. The company will, however, retain highly developed and well-proved indirect combustion systems on other engines where higher speeds are required. The Four 270D—the first direct-injection engine to be put into production by the Peterborough company—without valve or port masking. The passage has been shaped adequately to control the speed and direction of air entering the cylinder throughout the speed range. A number of leading agricultural and industrial equipment manufacturers at home and abroad has already placed substantial orders for the Four 270D.

The new engine has a 4.25 in. (108 mm.) bore, 4.75 in. (120.6 mm.) stroke, and 269.5 cu. in. (4.42 litres) capacity. Maximum torque is 189 lb./ft. for agricultural engines and 172 lb./ft. for industrial units, both reached at 1,000 r.p.m. Features of the Four 270D include the mechanically governed,



Longitudinal and transverse sections of the new Perkins Four 270D engine

has, it is claimed, the advantages of exceptionally low fuel consumption and particularly easy starting in cold weather. The agricultural version develops a maximum of 62 b.h.p., marine engines 58 b.h.p. and industrial units 56.5 b.h.p., all at 2,000 r.p.m. The new engine is supplementary to the Perkins L4, which develops approximately the same power.

Production of agricultural and industrial engines has already started and marine engines will go into production soon. The combustion chambers are formed in the piston crowns and fuel is injected directly into the chambers—toroidal bowls slightly offset from the centre line of the pistons—through four-hole injectors offset in the cylinder head. Individual sprays are arranged to ensure maximum air utilisation and air swirl in the cylinders is controlled by the inlet passages in the cylinder head distributor-type fuel pump; a large-capacity lift pump, push rod operated from an eccentric on the fuel pump drive hub; cast iron wet liners; and a low-level camshaft with the maximum diameter between the cams to give rigidity. The position of the camshaft makes installation of power takeoffs particularly easy for agricultural and industrial applications and the unit is suitable for many types of industrial equipment including cranes, power packs, compressors, welding sets, tractors and fork-lift trucks.

Two new steel shelves, respectively 2 ft. square and 2 ft. by 1 ft. 6 in., introduced by Handy Angle, Limited, give greater flexibility in unit width of storage racks using the company's standard slotted angle framing.

Some of the Midland Motorways fleet of Leyland "Comet" buses operating in Christchurch, N.Z.
Midland Motorways operate 100% Leyland...

—and can you blame them?

Midland Motorways Services Ltd., Christchurch, N.Z., operate 42 Leyland buses and coaches covering 1¼ million miles per annum. They write to say "Frankly, we are amazed at the small amount of maintenance required to keep them in first-class trim . . . piston rings do not have to be replaced before 200,000 miles . . . we have not re-sleeved any of the diesels (one has already done 314,000 miles) and expect them to reach 350,000 miles before this work is carried out. Oil-fuel consumption for the 8½ ton buses averages 14.75 m.p.g. Your engineers are to be complimented on their wonderful workmanship".

Well, they can't say fairer than that . . . but if the experience of lots of our customers is anything to go by, that re-sleeving business won't happen till over the 400,000 mark!

Annual mileage 1¼ million

350,000 miles before re-sleeving

Fuel consumption (36-seaters) 14.75 m.p.g.

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A PIONEER RE-EQUIPS

New Port Radar for the Mersey

A MATTER of considerable moment to all shipping, whether ocean, short sea or coastwise, which uses the River Mersey is that the Mersey Docks and Harbour Board, which pioneered the use of harbour surveillance radar when it installed the first major system at Gladstone Dock in 1948, has just brought into commission a rebuilt station equipped with the most modern equipment available. The new radar is a Decca Type 32 which was specifically designed for use at ports having high traffic densities. Similar equipments have been fitted at Southampton and are being supplied to Hamburg and the Port of London Authority. The chairman of the Mersey Docks and Harbour Board, Mr. M. Arnet Robinson, opened the new station last Monday evening (February 2).

The port radar station at Gladstone Dock with the new building beside the tower on which the new scanner has been mounted to replace the old one

This station has been built and equipped to replace the original installation which was brought into operation in July, 1948. Its object was to assist vessels to navigate the river and approach channels in periods of bad visibility and also to provide an efficient ship-to-shore communication service which is particularly essential in congested waters. In fine weather the principal assistance provided has been the issue of situation reports by radio telephone to pilots describing every four hours the position and movement of every ship at anchor or under way in the river or its approaches. Navigational warnings and weather reports are also included. In bad visibility when pilots ask to be kept under observation minute-by-minute information of the exact position of the ship is passed by radio to assist the pilot and supplement his own close local knowledge. In this way safe navigation can be maintained where the visibility might otherwise preclude further progress.

Value in Service

Since 1948, 5,332 vessels of almost 28 million gross tons have received radar assistance and the service has proved to be a valuable asset both as a time saver and as an aid to safe navigation. Although the results obtained from the original installation have been very satisfactory there have been, during the past few years, many technological advances in this field and the Board therefore decided that modern equipment should be installed in a building specially constructed for the purpose. The total cost of this re-equipment is about £72,000.

One of the seven Decca radar displays in the operations room showing shipping movements on the Mersey and also the electronic bearing lines and range rings

The new building at Gladstone Dock houses the electronic gear which consists of 3 cm. radar equipment of exceptionally short pulse length and v.h.f. F.M. radio equipment. The 25-ft. high-gain narrow beam radar reflector is sited on the original radar tower. For reliability and to ensure continuous operation during routine maintenance, there are two entirely separate radar channels with remote-control changeover facilities. The particular operational requirements at Liverpool dictate the use of seven advanced fixed coil displays, all fed from the one radar source.

Displays

Display No. 1 is off-centered to show a small-scale long-range general-warning picture out to a range of 20 nautical miles from the radar site, at a scale of approximately 1 nautical mile to the inch. Displays Nos. 2, 5 and 6 are off-centered to show in large scale the harbour and its approaches and covering an area of 5 nautical miles diameter at a scale of approximately ½ nautical mile to the inch. Displays 3 and 4 are off-centered to cover the Crosby Channel and showing an area of 2½ nautical miles diameter at a scale of approximately ½ nautical mile to the inch, while display No. 7 is available as an operational safeguard. It can be switched to cover the operational function of any of the other six displays.

Apart from the choice of these range scales and off-centering facilities, each display will incorporate one interscan line. Variable by simple controls in range, bearing and origin, this type of continuously painting electronic line is a most accurate method of obtaining measurements between any two points on the face of a radar display. Another facility is the use of Deccaplot reflection plotters on which will be engraved channel limits and buoy numbers.

★

VIBRATION STRAIN GAUGES

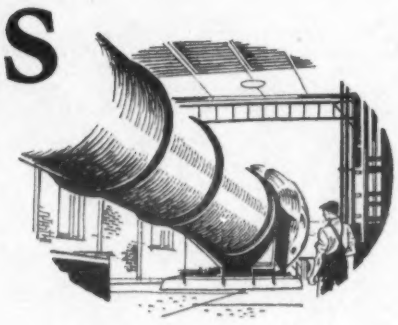
T.C.L. Ceramic Units

TWO new types of vibration strain gauges have been produced by Technical Ceramics, Limited, 22 Red Lion Street, London, W.C.1. The gauges can be used in a wide variety of applications for the determination and analysis of dynamic strain. Available either as expander or bender elements, the gauges are made of TCL Grade 3 piezoelectric ceramic having a wide temperature range and flat temperature coefficient. Piezoelectric material is self-generating and therefore requires less complex instrumentation than the wire strain gauge. The elements have high sensitivity, up to several hundred times that obtainable with wire strain gauges.

In addition to the use of these ceramic gauges as vibration pick-ups, they can also be used to generate vibrations in a structure by application of alternating voltage to the transducer. At resonance a considerable displacement of the structure is obtained with a very low power input to the element. The transducers are so small that they do not materially affect the vibrational characteristics of the structure.

Information supplied to us as the basis of a paragraph on the use of Onazote in our issue of December 6, 1958, indicated that this was being used for solar insulation in the roofs of coaches on order for the East African Railways and Harbours. The Crown Agents now inform us that the coaches so equipped were delivered some time ago.

One million pounds



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REORGANISATION IN THE REGIONS

Securing the Fruits of Modernisation

LINE AND DISTRICT TRAFFIC MANAGERS

STATING that the opinions expressed were his own and did not reflect official policy, Mr. G. F. Fiennes, line traffic manager (Great Northern) in the Eastern Region of British Railways, addressed the Metropolitan section of the Institute of Transport on Monday last on the subject of railway reorganisation, with particular reference to the Eastern Region. Within the framework of the duties attaching to the British Transport Commission, he said, the railways had a predominant part to play, representing, as they did, in terms of revenue and expenditure over 70 per cent of the Commission. If the railways were badly in the red nothing the Commission could do with its other constituents would put the undertaking in the black: there were perhaps too many of its eggs in one basket. The Commission could not pay its way unless the railways carried out certain radical tasks—to contract the system to an economic size, to bring the economic system up-to-date, to sell transport by rail effectively, and to operate the system punctually, conveniently, comfortably and cheaply—but not in that order of importance.

These four tasks were very different from those which faced the railways in 1947. Then—and indeed until 1955—they were earning an honest working surplus—over £300 million in eight years. Punctuality, speed, frequency, comfort, were improving. There was more shelter from competition. There was more emphasis on public service and less on profit. And the urgent tasks then were to unify the four former companies, to reap the financial rewards of unification, and to plan a course for railways as a whole for the future.

The instrument of management chosen for the then future was the Railway Executive—a small body composed, except for the chairman, of functional members, severally charged with departmental responsibilities and collectively expected to take corporate decisions. Working directly down through departmental officers in the regions they made, in unifying, a first-class start.

Devolution

When it was clear that the Executive had achieved its prime objects much of the central authority was devolved. The devolution took the form of setting up area boards, one for each region, and of promoting the chief regional officers, first to chief regional managers and then to general managers. To them the regional departmental officers transferred the part of their allegiance which formerly had been directed to the Railway Executive. At the centre remained general financial policy, national negotiations with labour, standards of design, major contracts, research, and one or two day-to-day matters such as the distribution of wagons.

The next steps, worked out in 1957 and put into force early in 1958, were—in the Eastern Region at least—firstly to fuse the commercial, motive power and operating functions into a traffic department, and secondly, to exchange some territory between the Regions. The Railway Executive had left a heritage of operating and motive power territories with length without breadth and of commercial territories designed as irregular polygons—quite natural departmentally. In a unified traffic department the geography had obviously to be unified. The London Midland Region, for instance, took over from the Eastern the Great Central main line from Marylebone to south of Chesterfield. The Eastern took from the London Midland the Midland main lines from Chesterfield through Sheffield to Cudworth. The North Eastern took from the London Midland the Midland main line from Cudworth to Skipton and from the Eastern the Great Northern lines in the West Riding.

Eastern Region Traffic Department

The traffic department, representing the fusion of commercial, motive power and operating, had three line traffic managers—Great Northern, Great Eastern and London, Tilbury and Southend—and had seven district traffic managers—Kings Cross, Sheffield, Doncaster, Lincoln, Liverpool Street, Cambridge and Norwich—whilst the L.T. and S. line manager doubled as his own district officer. Incidentally, there was no intention of reducing the size of the unit of management: the Great Northern line had some 30,000 on its pay-roll; and the Great Eastern more than 20,000; three of the traffic managers had around 10,000.

Under the traffic managers (line and district) came functional officers — commercial, motive power, operating—but their functions had changed significantly. It had been the object to strip the commercial officer of everything which would distract him from selling, cartage and handling operations (i.e. transit from door to door) being transferred to the operating officer. For the same reason all three officers had been relieved of certain functions to do with staff and works. Two new officers—a costing officer and an accountant—had been added to line and district for better appreciation of the financial benefits of, in the first case, individual transactions and, in the last, of all transactions.

Some Striking Results

This, very broadly, was "the tool," said Mr. Fiennes. Was it appropriate for the aforementioned four objectives? In contracting the system to an economic size the traffic organisation served excellently. The combination of authority over the three functions in the person of the traffic manager and the addition of a costing officer had meant that proposals could be conceived, worked up and approved "like comparative lightning."

Geographically the polygonal system, however irregular, was bringing quick and massive results where the territories of the London Midland and Eastern were being fused under the traffic manager, Sheffield. By the end of this month three marshalling yards—Woodhouse, Pindar Oaks and Stairfoot—would be closed and there were plans for closing 16 more by building two new mechanised yards at Sheffield and Staveley; it was also planned to close during 1959 four motive power depots and there was a medium-range plan for combining six more in one.

Now that each colliery in the area had one railway authority only and not two, agreement with the National Coal Board to dispense with duplicate access, duplicate sidings, duplicate staff and duplicate trains was proving far easier. The operating and engineering savings from this fusion of the two regions around Sheffield under plans which were bearing fruit after only a year already represented hundreds of thousands of pounds and would run into more than a million.

"There is, however, a significant shift of direction in plans for contraction," he said. "In the past we have been thinking largely of abandoning passenger or freight services or both on unremunerative branch lines. Now on the Great Northern main line we are closing all the small intermediate stations, so that in 120 miles between Hitchin and Doncaster we shall have eight passenger stations only. . . . More, we have adopted also—almost unnoticed—another principle: in closing the Midland and Great Northern we closed a line over 100 miles long—an unremunerative line but also a *duplicate* line." If this principle of concentrating on fewer main routes and abandoning the duplicates, whether unremunerative in themselves or not, was to continue, and he believed it would, with an eye on the Great Central main line and on one or possibly two on the east and west routes across the Pennines, there would again be large territories sparsely inhabited without rail service, and a better co-ordination with road was necessary.

Steps in Modernisation

The next main head was modernisation: first to contract and then to modernise the economic system. The steps in modernising were: "(1) What is the job to be done? (2) What is the best tool for the job? (3) To design the tool; (4) To get the money to buy it; (5) To introduce it, and (6) To see that we get our rewards." The first step was largely a matter of assessing the requirements of customers and anticipating them if possible.

In assessing speeds and frequencies of express trains for an electrification 10 years ahead they must think of competing aircraft not yet on the drawing board, of motorways and motor cars not yet built. In deciding the number, location, equipment and size of marshalling yards they must think of such things as the future location of industry, the results of the competition between coal and oil, the trend of national production and so on. The traffic department (district and line) "assessed requirements" in terms of potential traffic, frequencies and speeds, whilst a central economic survey office guided them with advice about long-term trends.

After the job the tool. Design of the tool was specifically and rightly reserved to the centre. "In the traffic department we are all too ignorant of technical advances and too busy—or should be too busy—to find out about them. There are very few people on the railway in this country who have the know-how to plan the physical side of, say, an electrification. It would be nonsense to dilute their labour to each line—still more to each district. Provided that the central planner is someone on whose knowledge, energy and integrity one can rely, let him sit at the centre and plan."

Implementing the Plan

When it came to the fifth and sixth stages—carrying out the work and reaping the rewards—the traffic organisation rightly came into play. The physical work of modernising a railway under conditions of full production inevitably interfered in greater or less degree with public service. Obviously the people who were making up the timetables, who were supervising the day-to-day operation, were in the best position to negotiate with the engineers as to how the work could most effectively be carried out.

Modernisation meant considerable redundancy and in referring to "our duty to our staff" the lecturer stressed the need for explaining again and again by men who knew their business and, far more important, were known to, and trusted by, their staff, in other words the traffic managers, who, having commercial, operating and motive power under their wing, should know and should explain the why and the wherefor with authority.

The Sales Effort

Discussing qualities needed in a good sales effort he named energy and courage, selection of traffic and concentration on it, knowledge of the transport product, knowledge of the customer's product and processes and of competitors' habits, ability to reach at will the man or men who controlled the customer's transport and power to negotiate with him. In these matters the traffic organisation had considerable advantages. The stimulus to energy and courage was immediate and had been recognised by customers and competitors. Concentration of the three departments in the same town and, progressively, in the same building had led to far more coming and going between the three functional sides and wider knowledge of the product. The stripping of the commercial officers of executive work in cartage and terminals had allowed them to turn outwards to concentrate on the products and processes of industry and to spend more time in personal contact.

Weaknesses lay still in the selection of traffics and in the power to negotiate. The tradition of going after everything all the time died hard, but the advice of the costing officers was helping in determining what paid the best, and in some districts there was a solid effort directed at heavy traffics in 8-ton lots and upwards. As to power to negotiate, price was still centralised except to an insignificant degree; the traffic manager had either to refer to the centre or to take a central representative with him; by neither means were the railways as effective as their allies and competitors.

Liaison for Road Freight

There was a need for better arrangements with British Road Services, and indeed with the private haulier. Competition for freight was between public transport and private transport, between the C-licence operator and the rest; the railways' target on the passenger side was not the bus but the private car. All this was a field for agreement and not one for battle.

As to the effectiveness of the new traffic organisation in current operation, to run a railway effec-

(*Continued on page* 10)

Over 6,200 routes

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signalling is now operating or is being installed to operate a total of approximately 6,220 routes.

This system, in which only one switch is required to operate a complete route, gives a speed of operation, particularly when allied with electro-pneumatic operation of points, which is unequalled by any other system.

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NEWS FROM ALL QUARTERS

Locomotive Works Closing

Gateshead locomotive works in the North Eastern Region of British Railways is to be closed in the early part of March. The works were originally scheduled for closing at the beginning of this year, but after representations by union representatives, the closure was postponed.

Use for High-Speed Teleprinter

To expedite the classification of more than 50,000 freight car records daily, the Illinois Central has installed the first high-speed teleprinter in the U.S. railroad industry. It is capable of transmitting 600 words a min. as contrasted with the usual 60 and 100 words per min. teleprinters in use on railroads.

Talyllyn Railway Buys Trackwork

The track of the railway used to carry limestone from Crich, Derbyshire, to Ambergate has been bought by the Talyllyn Railway Preservation Society for use on its own line, which has the same narrow gauge. The track is owned by the Clay Cross Co., Limited, which recently offered the track formation and other properties to Crich Parish Council for £5. This offer still stands.

Belgian Railways Problems

Speaking in Brussels, the Belgian Minister of Transport said recently that the present financial situation of the Belgian National Railways (S.N.C.B.) was hopeless. It would have to be met, he said, by the introduction of a 10-year plan, set in action as soon as possible. Electrification is seen as the salvation of the system; at present, of 3,000 miles of track only 555 miles is electrified. A large number of diesel locomotives is to be brought into service. Passenger fare concessions have become so numerous in Belgium that the railways estimate that only 20 per cent of all passengers now pay full fares. These concessions are to be drastically cut in the near future. Ordinary passenger fares are to be raised by 7½ per cent immediately and freight rates reduced by 10 per cent.

Hammersmith Flyover Scheme

The L.C.C. Town Planning Committee reported to the council at its meeting on February 3 on proposals for the design and construction of the Hammersmith flyover which forms part of the Great West Road extension scheme. The cost of the engineering works is estimated at £1,201,000; the flyover would mean at least a 50 per cent margin over present traffic volumes, it is claimed. The two carriageways will each be 24 ft. wide and the overall width 61 ft. Electric heating elements will be embedded in the approach ramps for use when necessary to prevent icing. The western approach will rise between the dual carriageways of the newly completed Hammersmith—Chiswick section of the Great West Road and from there, over Hammersmith Bridge Road, the flyover will run between St. Paul's Church and the Gaumont Cinema, then over Queen Caroline Street and Fulham Palace Road and down into Great Church Lane near Colet Gardens.

Camping Coaches in Eire

Next summer Coras Iompair Eireann is to provide holiday camping coaches at Killarney, Dungarvan and Carrick-on-Shannon. These converted railway coaches will be located permanently in suitable positions at or near the station premises. In each coach there will be sleeping accommodation for eight people.

German Railways 45-Hour Week Extended

The German Railwaymen's Union has announced that all employees of German private railways are to work a 45-hr. week with effect from April 1 this year. Up to now only some of the companies have been working the 45-hr. week, the remainder keeping to 48 hr. The German Federal Railway introduced a general 45-hr. week towards the end of last year. The union's eventual aim is a 40-hr. five-day week.

Road Grant When Railway Closed

A grant-loan of £2 million over a period of five years will be paid to the Road Fund in Eire to help in the solution of road problems caused by the recent closing down of some railway lines and by problems created by traffic to important industrial undertakings. In some cases, public road approaches to such undertakings have been found to need improvement, and could not be carried out from the ordinary sources of road expenditure.

Longest Swiss Road Tunnel Open

Preliminaries to a new hydro-electric scheme in the Blenio Valley, north of Biasca, Switzerland, have included various road improvements, avalanche protection works and the construction of what has become the country's longest road tunnel. This 1,620-yd. tunnel, recently opened to traffic, gives access to construction camps; the old road was liable to be blocked during the winter months. The tunnel has a width of over 20 ft. and two traffic lanes each of 9 ft. 2 in.

German Railway Rationalisation

Saving in staff, greater security and higher train speeds have been effected by the many rationalisation moves taken since the end of the war, says the German Federal Railway in a report. Some 2,750 miles of track and about 1,000 locomotives and multiple-unit sets have now been fitted out with induction-type train control and safety apparatus; many of these locomotives and railcars are now being single manned. Double magnets of from 1,000 to 2,000 cycles have been developed for use with home and distant signals in cases where these share the same location and smaller, low-frequency magnets for use with starting signals on passing loops. The Allrelais signal system was brought in by the Bundesbahn in postwar years under the name of the DR system; this has opened whole new fields of possibility in train operation. Mechanical boxes with long rows of levers or miniature lever power frames have been replaced by DR boxes with small, standardised control tables. A total of approximately 40,000 signalmen will eventually be reduced to some 15,000.

Pressed Steel
help modernise railways at home and abroad

The British Transport Commission has ordered a further 123 Diesel Multiple Units from Pressed Steel. These coaches are part of the railway modernisation programme for British Railways, and the order is a tribute to Pressed Steel's outstanding record.

In the last eight years Pressed Steel have supplied 80,000 new wagons and more than 800 units of coaching stock. They have produced a wide variety of wagons for different gauges for railways at home and overseas.

The Diesel Multiple Units from Pressed Steel are intended for use on the London Suburban Services from Paddington and in the West of England.

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COMMERCIAL AVIATION

C.P.A. Not Satisfied

THIRD DC6C FOR EAGLE

THE Canadian Air Transport Board has authorised Canadian Pacific Airlines to operate a daily service between Vancouver and Montreal via Winnipeg and Toronto. The main purpose of this grant was stated to be the provision of connections with the C.P.A. international routes, most of which are based on Vancouver. The grant has not satisfied Canadian Pacific which still wants to establish competitive service. It is also indignant at not being granted any points of call in the prairie provinces.

Loads on P.A.A. Boeing 707s

Pan American Airways Boeing 707s have averaged a seat factor of 90 per cent since they began operating transatlantic services last October. In all, P.A.A. had carried 26,055 passengers across the Atlantic in the 28,994 seats available to January 18.

More Room for Sabena Passengers

Until March 31 Sabena is spacing its first-class rear cabin seats to the maximum amount allowed by I.A.T.A. on the north Atlantic route. The maximum number of passengers carried in the rear compartment will be 12 instead of 16.

Traffic Through Dublin

In the three months ended December 31, 1958, aircraft movements at Dublin Airport totalled 5,735, of which 4,374 were in the air transport category. Passengers handled totalled 99,485, of whom 769 were in transit, and freight handled amounted to 1,926 tons (16 tons in transit).

Eagle's Third DC6C

Last week Eagle Aviation took delivery from North America of a third Douglas DC6C to be added to the two acquired by the company last autumn. This aircraft, registration 6GAPSA, is now undergoing conversion to Eagle's 100-seat standard in the hangars of Eagle Aircraft Services at Blackbushe Airport. The two earlier aircraft have now exceeded 2,200 hr. flying with Eagle on government contract and charter work.

Aer Lingus to Erect Memorial

A memorial to Alcock and Brown, the first men to fly nonstop across the Atlantic, is being erected at Clifden, Co. Galway, by Aer Lingus. The memorial, which will be situated on the Errislanan road about two miles south of Clifden, will be unveiled on June 15 this year, the fortieth anniversary of the flight. The airmen landed their Vickers Vimy aircraft in a bog outside Clifden on June 15, 1919. The memorial will be erected on high ground overlooking the point in the bog 1½ miles away where the aircraft landed, and a signposted cairn is being erected on the edge of the bog within a few hundred yards of the point of the landing. The soft ground at the actual landing spot would not support such a permanent structure.

British Airports in October

Air transport movements at British aerodromes in October, 1958, numbered 24,295, an increase of 5.3 per cent compared with October last year and the number of passengers handled increased by 8.1 per cent to 530,749. Freight picked up and set down amounted to 13,882.3 short tons, an increase of 24 per cent. Airports in the London area showed increases of 6.7 per cent in air transport movements and 13.5 per cent in passengers. At London Airport there were 9,410 air transport movements, an increase of 2.3 per cent compared with October last year and 294,603 passengers were handled, an increase of 7.4 per cent. Airports at which passenger traffic increased considerably over October, 1957, were: Southend (Rochford) by 25.3 per cent to 9,044, Edinburgh (Turnhouse) by 14.4 per cent to 9,788, Birmingham (Elmdon) by 10.5 per cent to 12,351 and Manchester (Ringway) by 9.8 per cent to 35,707. Other large increases in passenger traffic were at Bournemouth (Hurn) by 46.8 per cent to 7,981, Newcastle (Woolsington) by 109.5 per cent to 1,538, Blackbushe by 75 per cent to 18,864, Yeadon by 65.4 per cent to 1,206, Stansted by 49.8 per cent to 2,140, and at Lands End (St. Just) and Scilly Isles (St. Mary's) by 20.7 per cent to 1,410. Some aerodromes had a fall in passenger traffic compared with last year, the most marked being Southampton (Eastleigh) by 98.5 per cent to 114, Portsmouth by 79.7 per cent to 82, Croydon by 70 per cent to 810, Ferryfield by 33.8 per cent to 7,959, Blackpool (Squires Gate) by 24.9 per cent to 801, and Bristol (Lulsgate Bottom) by 22.6 per cent to 2,286. Traffic at Southampton (Eastleigh) was greatly curtailed during October owing to the waterlogged state of the airport and this accounts to a large extent for the considerable increase in passenger traffic at Bournemouth (Hurn) airport.

Level of Aer Lingus Fares

Some of the problems of economical passenger traffic overcome by Aer Lingus were outlined by Mr. Garret FitzGerald, A.M.Inst.T., former research and schedules manager of the airline, in a paper, "The Economics of the Peak in Air Transport," which he read recently to the Irish section of the Institute of Transport. He showed that the Irish airline carried 7½ times as many passengers during the summer peak as in the winter valley weeks—a more acute peak-valley problem than any other airline had to face. Aer Lingus was also unique among airlines in the shortness of its routes and the low level of its fares. While it was difficult to establish the exact extent of the disparity between its fares and those of other companies, Mr. FitzGerald claimed that no other European airline had an average fare per mile even within striking distance of the Aer Lingus averages. A recent international comparison showed that even on the Aer Lingus Viscount routes, where the average fare tended to be somewhat higher than on the cross-Channel services flown by DC3 (shortly to be replaced by Friendship aircraft) Aer Lingus fares were about one-sixth below the European average. Over the network as a whole the difference was probably as great as 20 per cent or even 25 per cent. With the exception of a payment last year, arising out of the increase in the Irish shareholding in the company, Aer Lingus had received no subsidy from its shareholders in the current decade, and it did not anticipate having to call on them in the future. The small size of the company, and the loss of many potential economies which can be achieved by large-scale operation, had been offset and probably outweighed by the much higher standard of operational and administrative efficiency that was possible in a small, compact organisation.

SOUTHERN CHIEF CIVIL ENGINEER

A. H. Cantrell

Mr. A. H. CANTRELL, E.R.D., B.Sc.(Eng.), M.I.C.E.

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As was recorded in MODERN TRANSPORT at the time, Mr. Alfred Henry Cantrell, who had been assistant civil engineer, Southern Region, British Railways, since June, 1951, succeeded Mr. F. E. Campion as chief civil engineer of the region on December 1. Prior to joining the Southern Railway as a draughtsman in the bridge office of the chief engineer in 1927, Mr. Cantrell had been since 1924 on the staff of the bridge stress committee of the Department of Scientific and Industrial Research. After joining the railway he was made resident engineer on various bridge reconstruction works until he returned to the bridge office in 1931. Four years later he was transferred to the office of the London East divisional engineer where he was in charge of the permanent way section. In 1939 he was appointed engineering assistant in the same office and carried out investigations into rail welding and track bracketing. He had been commissioned in the Supplementary Reserve, Royal Engineers, in 1929 and went to France at the outbreak of war in 1939. After various appointments in movement control, he was transferred to railway construction in 1941 and saw service in North Africa, Sicily and Italy. He was thrice mentioned in dispatches and was awarded the United States decoration of Legion of Merit. At the time of his demobilisation in 1945 he was lieutenant-colonel in command of the Railway Construction Group and recently he was gazetted major in the Engineer and Railway Staff Corps. Appointed assistant divisional engineer, London East, in May, 1942, divisional engineer, London West, in August, 1946, and divisional engineer, London East, in November, 1947, Mr. Cantrell has thus been closely concerned with much of the planning for the electrification and other modernisation work now being carried out on the Eastern Section of the Southern Railway as well as for many interesting tasks of maintenance on ageing structures.

IN PARLIAMENT

London Travel Committee

FOUR WORKING GROUPS

THE new London Travel Committee has held two meetings, the Minister of Transport told a questioner last week. It has not yet made any formal reports, but the chairman has informed him that the committee has made an assessment of the problem and is setting up four working groups to deal, respectively, with staggered working hours, road congestion, building development as affecting travel, and the feasibility of further railway construction. MR. ERNEST DAVIES asked whether the Minister was fully satisfied that this large committee of "a very mixed bag of persons, both professional and amateur," was the best body to tackle this problem urgently. MR. WATKINSON said it had the full technical resources of his department at call at any time.

Scope of Driving Tests

In an answer dealing with delays and other factors in compulsory driving tests, the Minister of Transport mentioned that he had recently been considering the whole scope of driving tests.

Road Expenditure in Future Years

In response to a request for a statement on the progress and future of the road programme, the Minister of Transport, MR. H. WATKINSON, said it was his general policy not to announce lists of schemes far in advance, but measured in terms of expenditure he could say that as compared with an average expenditure on major improvements and new construction over the past four years of £12.3 million, expenditure this year was likely to be well over £40 million. The approved capital investment programme for the next year included expenditure of over £50 million, and for the year thereafter of over £60 million. It is the intention that thereafter the programme should be planned on a basis of not less than £60 million per annum.

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SPECIAL A-LICENCES

Consolidation on Expiry

SINCE the closing months of 1958 there has been a growing trickle of applications in *Applications and Decisions* for ordinary A-licences in continuation of expiring special A-licences, the first of which were granted in January, 1954. It is already clear that many licence holders are not waiting until any, or all, of their SA-licences expire but, particularly where they hold an ordinary A-licence also, are making application at once for the consolidation of SA-licences with the ordinary licence.

Taking first the simpler case of the operator with more than one SA-licence, the licensing authorities are prepared to accept a composite application for their consolidation into one new A-licence, and many are inviting the operator so to apply, so soon as the first expiry date draws near. The choice is, however, entirely for the operator. The position is broadly similar where the licence holder wants to consolidate several SA-licences with an A-licence which he already holds, i.e. by a variation of the latter licence. If this is done, however, the operator will not usually obtain a full five-year renewal period for the former SA vehicles since the expiry date of the existing A-licence will, of course, stand.

Tidying-Up Operation

There are clear advantages in "squaring the books" now rather than waiting for each of perhaps ten or twenty SA-licences to run out. In the first place it tidies up the licensing position for the operator and he will not run the risk of overlooking an expiry date. More important, perhaps, is the possibly large saving in legal fees involved in several appearances in the traffic court. There will certainly be a reduction in the clerical work required of the licensing authority's staff and perhaps some filing space saved, too.

When it comes to the question of normal user attaching to consolidated licences there appears to be some divergence of view between the various licensing authorities. The more common ruling is that a consolidated licence will be issued only where all vehicles are operated from the same base and are to have the same normal user, but at least one authority is prepared to grant such a licence with a different normal user for different vehicles.

Different Normal Users

This may have relevance to a situation where, at a public inquiry, an applicant having sought a consolidated licence with a single normal user, an objector contends that, on the evidence of past use put in, a more restrictive user would be appropriate to certain vehicles. Incidentally, all licensing authorities are demanding the same certified evidence in support of SA renewal applications, though some ask for it in greater detail than others. There should be produced, for a period of not less than twelve months prior to the date of application, the following particulars:

(i) tonnage carried per month;
(ii) mileage per month;
(iii) gross earnings per month; and
(iv) amounts paid to sub-contractors per month.

In the event of an objection of the character just referred to it is for the applicant to decide his course of action; the licensing authority cannot enforce an amendment to the normal user declaration but the applicant can elect to alter his application so as to introduce a more tightly-drawn normal user in respect of all the vehicles, in order to avoid that the application might be refused in toto. However, even if he went ahead and the authority refused the application in respect of the vehicles which formed the subject of the objection, the holder would still be able to use them until the relevant SA-licence expired. This would also give him time to reconsider the normal user declaration for these vehicles.

The West Midland licensing authority (and there may be others) will not in any event accept normal user declarations framed "in very wide terms" and applicants guilty of this are being asked to amend their form GV1A (or GV6 if it is a variation), either by basing the declarations on the type of traffic carried and the destinations served by the vehicle(s), or by basing it on their intentions for the future. This latter is by way of reminding the applicant of section 9(4) of the Transport Act, 1953, which refers to false statements or statements of intention or expectation unfulfilled.

CANADIAN TURNSTILES TO BE MADE IN BRITAIN

Bailey Range Extended

A RANGE of three-arm turnstiles which can be either coin-freed or of simple in-and-out design—previously marketed only in Canada—is to be manufactured in this country under an agreement signed by Sir W. H. Bailey and Co., Limited, of Albion Works, Patricroft, Manchester, and the Canadian Beaver Co., Limited, of Toronto. The turnstiles, which are of contemporary design so that they can be used in modern settings, were developed by the latter and are now widely used in Canada—a recent installation being on all stations of the Toronto subway.

The announcement that they are to be manufactured by the British company means that the range of Bailey turnstiles is now one of the most comprehensive in the world. Each turnstile consists basically of a 38-in. high reinforced-steel cabinet, three hydraulic self-centring stainless steel arms, each 15 in. long, a built-in tamper-proof register recording up to 99,999 before returning automatically to zero, and, if required, a coin-freed mechanism which can be preset to take coins of the required size. The standard version weighs 120 lb. Alternatively, the turnstile can be mounted on an anti-slip footplate, with set in handrail, so that it forms a self-contained unit for portable use.

A smaller version, weighing only 85 lb., which uses the same mechanism but with a cabinet of reduced size, is also available. This unit has been designed specifically for installation aboard public transport vehicles where the trouble-free coin mechanism and ease of operation are claimed to speed up passenger loading and alighting. This version can also be mounted on a platform so that it forms a portable, self-contained unit. For heavy continuous duty there is a 225 lb. unit.

One of the three-arm turnstiles of the standard free-exit pattern installed on the Toronto subway

Railway Reorganisation

(*Continued from page 7*)

tively from timetable to timetable and day to day, dedicated to six principles: safety, punctuality, convenience, comfort, speed and economy, needed constant grinding attention to principle and to detail, constant keeping people up to the mark, and this by a few senior people in the organisation—departmental officers, district officers, assistants, inspectors and top stationmasters—for results were inclined to sag as soon as there were distractions, especially in the process of changeover.

Advantages and Disadvantages

For the organisation itself there were material advantages in the close alliance under local management of the three functions—alliance because in current operation the organisation was not a fusion. The superintendents were still departmental; the only traffic people were the managers—three line and seven district—10 men in over 50,000—but that was another problem. The advantages lay in the physical proximity of the functional officers in the same building, the sense of common direction and purpose, the gradual learning of a common language, and indeed the gradual unlearning of a previous language.

Secondly, the transfers of function were useful. The transfer of the terminal and cartage work to the operating side was leading to great things, especially in planning transits as a single operation. The transfer of the public timetable also to the operating side had led to streamlining the timetable and cheapening the process.

Thirdly, the transfers of territory between the regions and the identity of territory between the three functions had—in the short term—made some economies possible, especially in working to collieries with duplicate access, in passenger services on parallel lines, and so on.

On the other side of the picture was the administrative disadvantage of splitting the planning of services and the supervision of operation on two main lines each of which before was one administrative unit—e.g. the Midland and the Great Central. Timetabling, dealing with fluctuations of traffic hour by hour, dealing with late running from hour to hour and day by day, wagon distribution, were all more difficult; naturally, because a railway was best operated from end to end. It would be surprising were there no disadvantages in the new organisation to offset the benefits. Moreover, there was more specialisation in the traffic organisation than in the departmental.

The Future

"In the new organisation," concluded Mr. Fiennes, "there are some advantages and disadvantages—advantages in the polygonal territories in contracting the system and in making 'good housekeeping' economies by fusion, disadvantages inherent in the process of reorganisation and in the lack of proper arrangements with road operators in contracting the system. In the long term the advantages in modernisation, in sales and in the alliance of the three departments will become more fruitful; the disadvantages in the arrangements with the bus companies and B.R.S. will persist. The disadvantages in planning timetables and in superintending the operation of lines designed as units but reorganised into separate parts will become more and more apparent as time goes on.

"Some of these things we can correct without altering the organisation radically; training for officers by small adjustments or exchanges of duties within the present framework; liaison with the road operators by common management at district level or other device to the same end. In the long run as, after a term of years, the benefits of the present organisation are secured one by one and are forgotten, the division of the Great Northern and the Midland and the Great Central, if it still exists, into arbitrary parts will bear more and more hardly on superintendents and managers. And in, maybe, 10, 15, 20 years, departmental organisation will come into its own again. And that is how it should be. Organisation is a live thing constantly changing. Let us reap the harvest of each type in turn."

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LOCOMOTIVE CABS

Argonarc Welded Finish

THE cab of the 2,000-b.h.p. diesel-hydraulic locomotives for the Western Region of British Railways is built by Lightalloys, Limited, Willesden. It is composed of some 30 separate Alpax castings which are bolted together. The outside edge of each joint is given a vee preparation and a ¼-in. deep sealing run is put in, using an Argonarc Mark III welding torch supplied by British Oxygen Gases, Limited.

The torch has a water-cooled shield and the current is 187 amp. obtained from a C.P.U. 300Q power unit. The filler rod used is ¼-in. Silotectic. The sealing run is afterwards ground and polished. As well as keeping out the weather, it provides a smooth finish and adds some strength to the joint.

★

B.P. RESEARCH UNIT

New Organisation

IN keeping with the British Petroleum Company's increasing interest in petroleum chemicals, a new research unit which will specialise in this field of activity is being formed at the group's research establishment at Sunbury-on-Thames, near London. At the beginning of the year the establishment at Sunbury was renamed B.P. Research Centre and research is now handled by three divisions.

A Petroleum Division will carry out all the work handled hitherto by the Research Station. As at present, it will be responsible to the refineries and technical department in B.P.'s London office. An Exploration Division, until now called Exploration and Production Laboratory, as at present will be responsible to the exploration department. A Chemicals Division is a new unit which will carry out all petroleum chemicals research and will be responsible to the petroleum chemicals department. The administration of the centre will continue to be carried out by an administrative manager.

★

ALLOY DIE CASTINGS

Brochure Marks Kaye Jubilee

MARKING the founding 25 years ago of Kaye Alloy Castings, Limited, the Brockhouse advertising and publicity division, 25 Hanover Square, London, W.1, has published a handsome illustrated brochure describing some of the company's current activities. The firm started production of die castings in a small factory at Handsworth, Birmingham, which has been progressively expanded and now concentrates on gravity castings in both zinc and aluminium alloys ranging from ½ oz. to ½ cwt. in weight. Mechanisation permits high-speed long-term production runs of castings of high quality at low cost.

In addition, the company has established two extremely modern and well-equipped pressure foundries at Presteigne, Radnorshire, where has been developed the technique of shell-blown destructible cores for high-quality zinc and aluminium alloy castings of the type for which metal internal coring is impracticable. To ensure absolute purity of zinc daily analysis checks are made and zinc and aluminium foundries are operated as completely separate units. Zinc castings are produced ranging in weight from a fraction of an ounce up to 15 lb. and aluminium up to 4 lb. in weight.

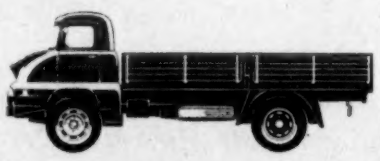
From March 2, 1959, the address of the South Eastern traffic area offices will be Southbridge House, Southwark Bridge Road, London, S.E.1.

Southern Ignition Co., Limited, Brighton, main Lucas-C.A.V. agent, has moved its Worthing branch into larger premises at 67 Victoria Road, and opened a new branch at 51 The Hornet, Chichester. Complete diesel and electrical sales and service facilities are available from both of these new addresses.

DRAMATIC CROSS-CHANNEL DASH TO PARIS

Wolsey Brothers, leading Smithfield wholesale butchers, planned to supply the Les Halles market of Paris with prime British beef in a matter of hours in one fast 'no-change' delivery. They selected a Thames Trader with full refrigeration facilities for the venture and, easily coping with Channel crossings, Customs, and Paris traffic, the Trader made the round trip in under 24 hours. Delighted with this time-saving profit-making trip, Wolsey Bros. now make this Paris run regularly in 16 hours and Parisians enjoy British 'rosbif' the same day!

Here's one more instance of Thames and the Traders taking the lead in carrying British goods into the heart of Europe. Paris, Brussels, Milan... whatever the destination, it's another dividend-paying haul for a fortunate Trader-wise operator. Here's why your profits will soar with Trader time-schedules. You'll get bigger loads, and better manoeuvrability with the Ford forward-control . . . unflagging top-gear performance and economy with the silent, synchromesh gearbox. And it's the best cab comfort ever for fortunate Trader drivers. Take the headache out of rising transport costs; ask your Ford Dealer for a Trader demonstration.



Whatever your transport problem there's a Trader built to build YOUR business. Make your 'tonnage' choice from the 30 cwt. to 7 ton range and choose from the 4 or 6 cylinder engines with an option of petrol or diesel power.

THAMES **TRADERS** BY FORD

30 HUNDREDWEIGHT TO 7 TONS

MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

NEW TEST BED FOR GAS TURBINES

Developments at B.E.A. Engineering Base

NEW extensions for the British European Airways engineering base at London Airport, including a new 900-ft. long hangar with maintenance bays for 10 aircraft, are now nearing completion and are expected to come into full use by next July.

On a recent visit to the base we were able also to see the impressive facilities for the overhaul and subsequent testing of Rolls-Royce Dart turboprop engines which have been used there since March, 1958. By the provision of the new overhaul shop and test bed at a cost of about £300,000 B.E.A. has become the first British airline to undertake responsibility for the complete overhaul of this type of engine. With more than 250 Dart engines in service B.E.A. now has more gas turbines in use than any other airline operator in the world.

The main advantages which B.E.A. will gain from carrying out the engine overhauls at their own base include the elimination of time and cost of road transit to the makers' works and a consequent reduction in the number of spare engines needed to ensure maximum serviceability of the Viscount fleet. Hitherto engines for overhaul were not usually available again for replacement in an aircraft in under three weeks and it will at once be apparent that a considerable amount of capital was tied up in the pipeline between London Airport and Derby. Under the new arrangements engines coming out of service are received by the engineering base, where they are reduced to their sub-assemblies which are in turn dismantled. At present this work and the actual overhaul and testing of engines is carried out on an experimental scale in an engine overhaul and test shop located within the existing workshops. On completion of the new hangar and workshops far more extensive overhaul facilities will become available. In the meantime the pilot scheme is being used to provide practical experience for B.E.A.'s engineering staff.

The salvage, or rework, section can cope with hand and machine rework for Dart engine repairs; right, the engine door to the test cell is open and one of the test carts is in the background

Dismantling Section

One of the features of the dismantling section is the provision of the special tools required on fitted display panels fixed adjacent to the points where the individual break-down operations are taking place. In this way the work and the tools are brought together and considerable time is saved. Mobile stands of various sizes are used for the dismantling (and rebuilding) of the engines. Many are provided with power-operated rotation about the lateral axis. All can be rotated manually about the longitudinal axis. This affords maximum accessibility and permits the engineers to position the work with accuracy. For dealing with sub-assemblies there are a number of bays equipped for a particular series of operations. In addition there is a cleaning bay for trichlotethylene vapour degreasing and kerosene washing of dismantled parts. The so-called rework or salvage section is capable of both hand and machine rework. Most of the machines in this area are of the general purpose type but satisfactory for and recommended by Rolls-Royce for approved Dart repair schemes. In some cases special equipment is provided; for instance there is an Argonarc unit adapted for work on turbine blades and combustion chambers.

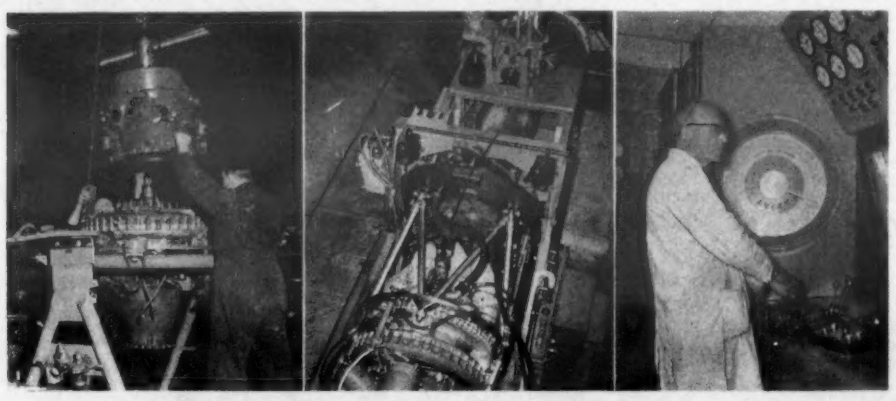
After reassembling the overhauled engines are subjected to a rigorous testing programme. The engine test plant is in fact the main feature of the new overhaul scheme. To save space and as part of the measures taken to reduce noise the test equipment has been placed in an underground cell. To ensure maximum throughput of engines particular care has been taken to ensure that the absolute minimum of time is needed to change from one engine to another. An extremely ingenious method has been adopted by B.E.A. in close collaboration with Heenan and Froude, Limited, of Worcester, which designed the entire test plant and was responsible for its manufacture and installation. Two engine carts have been provided, one of which will normally be in use on the test bed while the other is in the overhaul shop above, having an engine fitted to it in readiness for testing. By means of the engine cart the necessary electrical harness, piping, adaptors and the like can be fitted to a power unit before it enters the test cell itself, and while the plant below is testing another engine. Special features of the engine cart are the bulkhead (a replica of that on an aircraft) and the Avery-Hardoll self-sealing coupling manifold which enables oil, fuel, water-methanol, etc., to be connected automatically and instantaneously to the test supply.

A sliding door, motorised to run horizontally to and from the closed position, is used to cover the 10 ft. by 6 ft. floor aperture through which the engine enters and leaves the test cell. Excellent soundproofing has been achieved by arranging the door's rollers on eccentrics which allow it to be lowered on to thick felt pads. A 2½-ton Ardecar travelling crane is used for hoisting; outrigger guides (whose curvaceous shapes have already provoked frivolous nicknames), fixed to the test cart sling, protect the assembly from damage in the unlikely event of the cart striking the sides of the aperture while descending to the test bed.

Test Cell

The underground cell is divided into two compartments, one containing the control room and the other housing the actual test equipment. When the engine cart is lowered into position on to the base plate it is located by dowels with such accuracy that the above mentioned pipe connections automatically and without effort engage with matching self-sealing supply points. After locking the engine cart in position the Dart engine propeller shaft is coupled to a tubular cardan shaft connecting it to a Heenan Dynamatic Mk VI CA dynamometer capable of absorbing and measuring up to 2,500 b.h.p. The torque which at any time is being absorbed by the dynamometer is measured with great precision and indicated on a large dial in the control room.

The necessary loading of the accessory drive of the engine under test is obtained by means of a small Froude hydraulic dynamometer carried on an accessory trolley from which is also suspended the extension exhaust pipe. An exceptionally good view of the test bed itself is had through the wide observation window of the adjoining control room. The side of the engine remote from the observer is seen in a wall-mounted mirror. The control desk assembly is by Heenan and Froude and carries all operating, warning, indicating and interlocking devices needed to test and safeguard the engine and equipment. The rate of the engine's fuel consumption (up to two gallons per minute) can be checked from gauges behind a glazed display, but no fuel pipes are carried through the control room itself. The main fuel tanks, holding 5,000 gallons, and pump room, are located outside the building.



Dismantling a Dart 506 in the overhaul shop on a Morfax power-rotated engine stand; a Dart ready for running seen through the door to the test cell; right, the operator in the control room

Safety precautions are exemplary throughout the plant. Exhaust gases are taken through a soundproofed uptake to the roof of the building where they are discharged to atmosphere. The main air intake can be sealed by electro-pneumatically actuated shutters as a fire precaution in addition to Walter Kidde CO_2 and Mather and Platt water spray equipment. The floor trenches are continuously scavenged to remove fumes by means of ducting and separate fans. This extraction equipment is interlocked to prevent fuel from being supplied for test runs until scavenging has been applied for 20 minutes from a shut-down condition.

Noise Suppression

Soundproofing of the tank-like structure is further assisted by rockwool packing in a timber lattice frame covered by perforated galvanised sheeting. General responsibility for sound control has been in the hands of Horace W. Cullum and Detuners, Limited, London, N.6, whose highly successful solution of a very difficult problem has been a contributory reason for the confidence in deciding to locate the additional testbeds in the new maintenance base extension above ground. Two Heenan and Froude testplants are being installed with a

(*Continued on page* 13)

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to and from the Continent

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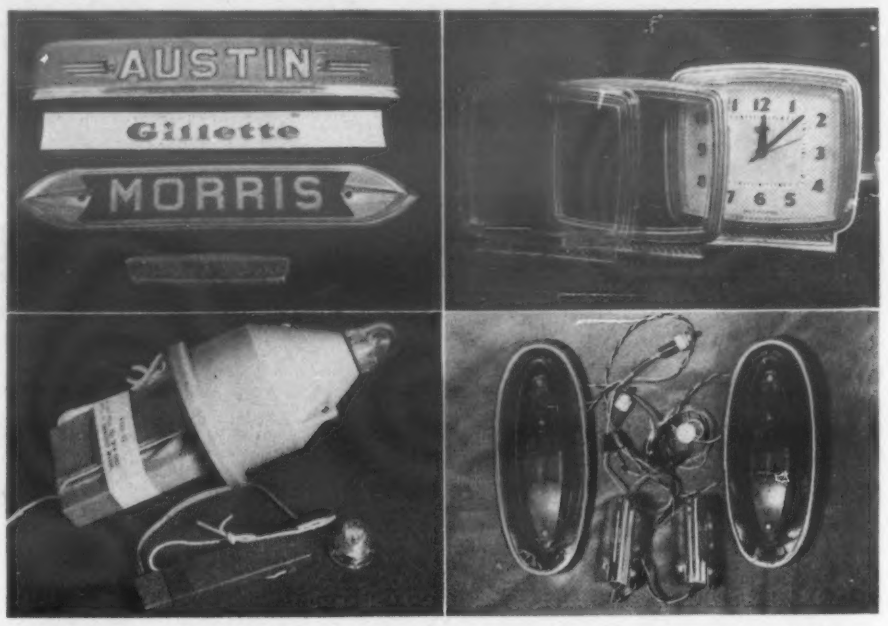
ACRYLIC MOULDING MATERIALS

I.C.I. Stages Diakon Exhibition

A FASCINATING exhibition was staged in London last week by Imperial Chemical Industries, Limited, to illustrate the progress made in Diakon acrylic moulding materials and, especially, the development of dry colouring associated with Diakon polymer for injection moulding and extrusion. More than 170 exhibits were available for inspection. Diakon was first introduced as the injection moulding grade of Perspex in 1936, but largely because of the war it was not taken up extensively until in 1957 it was demonstrated that a polymer grade could be moulded with success. The tenacity of I.C.I. in continuing without commercial encouragement to persist with the material through two decades is highly commendable and has already been rewarded in the discovery of a very large number of applications of a plastics that is most attractive in appearance and has many valuable properties. Like Perspex, Diakon is a registered trade mark of Imperial Chemical Industries, Limited.

It is a form of polymethyl methacrylate, chemically akin to, and having many properties in common with Perspex acrylic sheet. It is a thermoplastic material supplied either in fine powder form (polymer) or in conventional regular cut form (compound), from which rigid components are made by injection moulding or extrusion. In each physical form two basic grades are available which differ in ease of moulding and in the temperature resistance of the final moulded article. It is intrinsically a clear, colourless material having excellent optical properties. It can also be produced in a wide range of colours—transparent, translucent, and opaque. In all these forms it meets automobile specifications requiring retention of clarity on continuous exposure to conditions of high temperature and high humidity.



Examples of Diakon components: Insignia by Wilmot-Breedon; Auto-glow clock by S. Smith and Sons (England), Limited, with Diakon face and cover; below, McMurdo sea lights; right, rear-light installation for a Vauxhall vehicle

Outstanding Characteristics

The outstanding characteristics of acrylic mouldings are their dimensional stability and their excellent resistance to outdoor exposure. The water absorption of Diakon is very low, and no difficulties are caused by changes in humidity. Except in the

(*Continued on page* 14)

OFFICIAL NOTICE

CITY OF BIRMINGHAM

TRANSPORT DEPARTMENT

APPOINTMENT OF
TRAFFIC SUPERINTENDENT

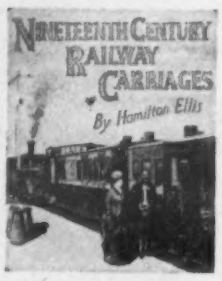
APPLICATIONS are invited from suitably qualified persons for the above appointment. The salary attached to the post is in accordance with Scale "G" (£1,890—£2,165).

Applications, stating age, present position and salary, qualifications and experience, together with the names of two referees, should reach the undersigned not later than Monday, February 16, 1959.

Canvassing disqualifies.

W. H. Smith,
General Manager,
Birmingham City Transport,
The Council House,
Congreve Street,
Birmingham, 3.

A UNIQUE HISTORY



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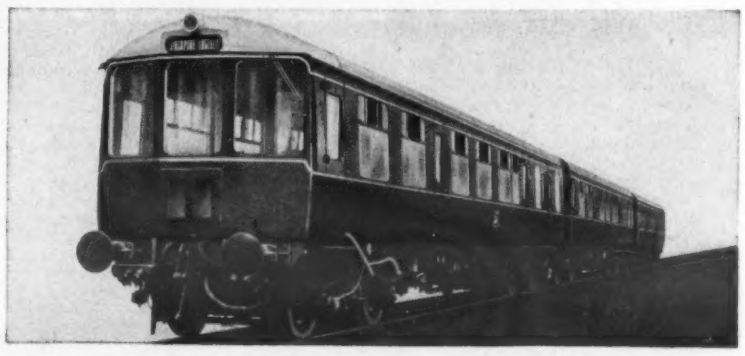
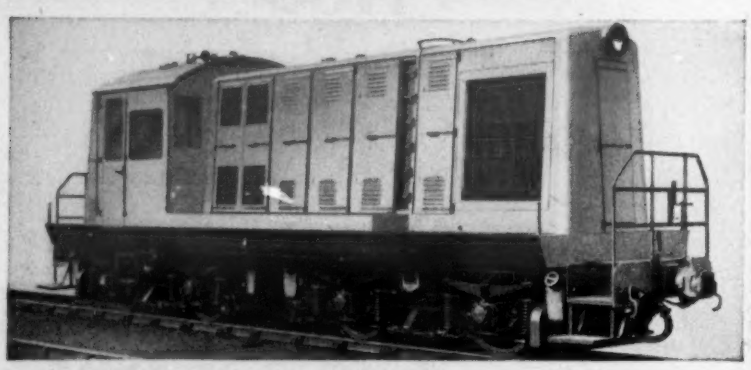
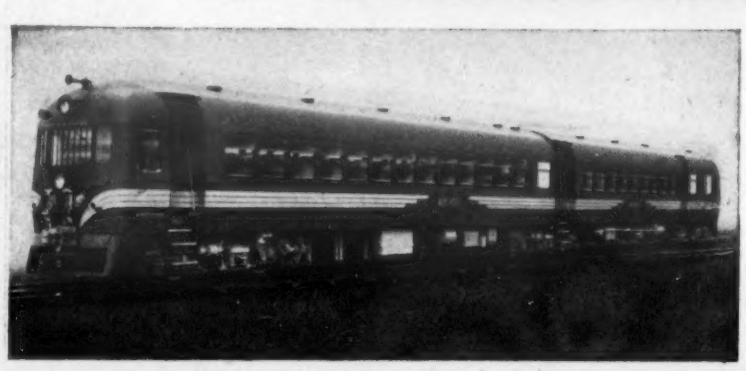
955 H.P. Diesel-Electric Locomotive (10 Ton Axle Load)
In collaboration with Sulzer Bros. (London) Ltd and Crompton Parkinson Ltd.

BRITISH RAILWAYS
Three Unit Diesel Mechanical Railcars



GHANA RAILWAYS
400 h.p. Diesel Electric Locomotive





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In collaboration with The Drewry Car Co. Ltd.

BRITISH RAILWAYS
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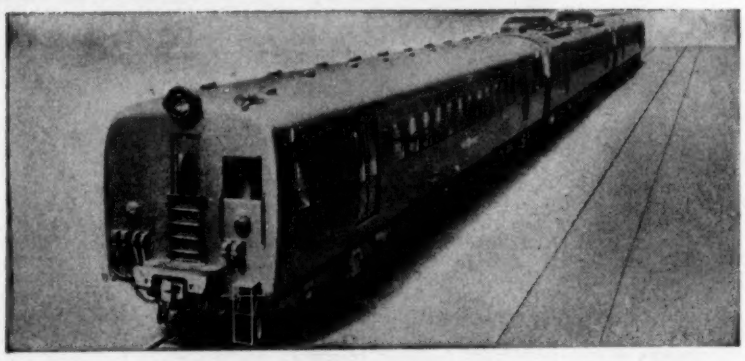
In collaboration with Sulzer Bros. (London) Ltd. and Crompton Parkinson Ltd.

SANTOS JUNDIAI RAILWAY, BRAZIL
3,000 Volts, 800 H.P. Three Car Train
In collaboration with The English Electric Co. Ltd.



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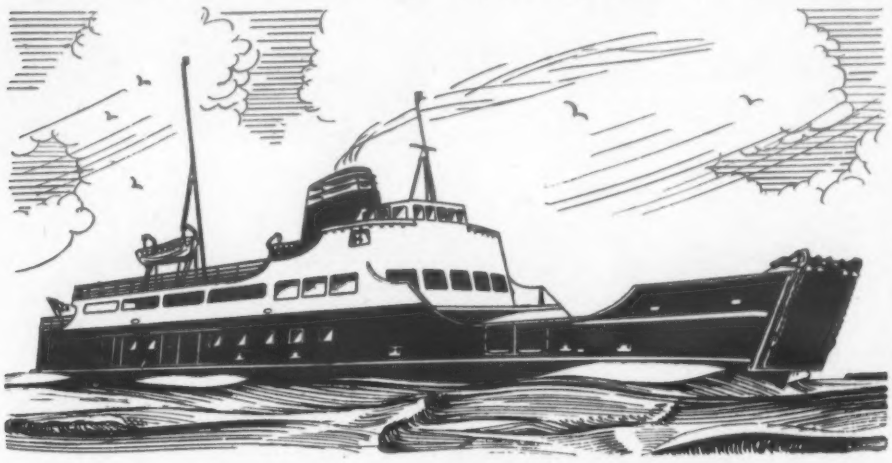
BRIDGING THE SOLENT

New Ferry to Enter Service Next Summer

FEATURES OF "CARISBROOKE CASTLE"

THE first recorded reference to a regular shipping service between Southampton and the Isle of Wight is that in 1774 packet boats left Southampton every evening, except Monday, and returned the following day. A steamboat service was introduced in 1823, but was not developed until after the opening of the Royal Pier at Southampton 10 years later. Thereafter traffic continued to increase steadily until by 1861 there were seven steamers engaged in the service. In that year the Southampton, Isle of Wight and South of England Royal Mail Steam Packet Co., Limited, was incorporated, and took over the existing services and developed them.

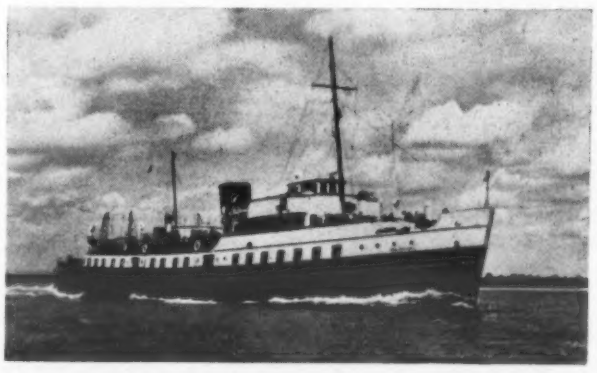
Today, almost a century later, the same company, perhaps more widely known as Red Funnel Steamers, still operates one of the three principal services connecting the Isle of Wight with the mainland; between Southampton and Cowes. In recent years, however, it is on the towage side of the company's business that the biggest developments have taken place, due mainly to increased shipping using Southampton Docks, and to the vast growth of tanker traffic associated with the new refinery and oil storage installations. Over the past six years five new tugs have been built, and these have proved a useful contribution to the efficiency of port working.



An impression of "Carisbrooke Castle," the new passenger and vehicle ferry which will be placed on the Red Funnel service between Southampton and Cowes this summer

Modern Passenger Fleet

The passenger fleet is now composed entirely of modern diesel-engined ships, all equipped to carry vehicles. Regular services for passengers and motor vehicles are operated throughout the year. During the winter months seven services in each direction are run daily, and in the summer this is increased to eight with later sailings from both the mainland and the island. On peak Saturdays during the summer months sailings are further augmented to provide an hourly service between Southampton and West Cowes, and in addition five services are operated to East Cowes to deal with vehicular traffic. Services connect with main-line trains from London, the West of England, the Midlands and the North, and also with long-distance express coaches to many parts of the country.



"Balmoral," built in 1949 by John I. Thorneycroft and Co., Limited, has the highest passenger capacity of the present fleet

As might be expected, the most important development in recent years concerning the service to and from the island is the big increase in car traffic. All the company's ships at present in service have facilities for handling vehicles, and its latest vessel, the *Carisbrooke Castle*, has been designed as a vehicle carrier, although it also has accommodation for more than a thousand passengers.

Excursions

Apart from the regular service a variety of excursions are run during the summer months to most of the nearby resorts, and, in addition, trips are arranged round the island, and for viewing the ocean liners at Southampton Docks. There is also a regular daily commercial service between Southampton and Cowes, subject only to the limitation that a consignment must not exceed 40 tons gross weight, nor exceed 60 ft. in length, 12 ft. in width or 18 ft. in height. Vehicular traffic is conveyed on the roll on—roll off principal, and sailings are timed so that it is possible to effect deliveries on the island and return to the mainland on the same day. Particulars of the company's fleet of ships, as it will appear when the *Carisbrooke Castle* is commissioned in June, are given in the accompanying table.

Latest Vessel Launched

The *Carisbrooke Castle* was launched at the Woolston Yard of John I. Thornycroft and Co., Limited, on November 27, 1958. Designed to meet the specific requirements of operating an integrated service, as a passenger and vehicle carrier between Southampton and either East Cowes or West Cowes, the vessel has a somewhat unorthodox appearance on account of its fore end vehicle ramp. Side loading is also catered for, and sliding doors in the side give access to the sheltered car deck, whilst hinged bulwark doors forward are provided for larger vehicles. A 13-ft. diameter turntable is fitted flush into the after end of the car deck to assist in the stowage of vehicles. Altogether the deck has space enough to accommodate some 45 average cars.

Since the vessel is permitted to carry a maximum of 1,200 passengers, considerable thought has been devoted to the provision of suitable facilities within the limits imposed by a vessel of this character. The main features are a large observation lounge and saloon on the promenade deck. The lounge is equipped with a buffet bar, and extra large windows have been fitted so that passengers have an unimpaired view when seated. The saloon is also equipped with a bar. Adequate toilet facilities and a ladies' rest room are provided. External seating on the promenade deck is protected from the weather by glass screens fitted at the side openings, and similar provision has been made on the boat deck.

Accommodation

The captain's cabin is sited aft of the wheelhouse on the boat deck, and the purser's cabin is in the deck house on the promenade deck. On the main deck separate cabins are allotted to the chief engineer, the second engineer, the mate and the chief steward, and there is also an officers' mess room. Accommodation for the crew is on the lower deck, and includes a mess room, galley, wash rooms and toilets.

The vessel has twin screws and a service speed of 14 knots. The main propelling machinery consists of two Crossley type HRN8/45 vertical two-stroke direct reversing marine diesel engines with a total continuous rating of 1,800 b.h.p. at 450 r.p.m. The deck machinery, supplied by Vickers Armstrongs (Engineers), Limited, consists of one cable lifting and warping capstan, and one warping capstan fitted forward; one warping capstan fitted aft, and two ramp hoisting winches placed in machinery houses, one port and one starboard. The steering gear is of the hand and power electro-hydraulic type, the motor, rams and pump being placed in the steering compartment. Twin spade type rudders are provided; the bridge control is by telemotor gear.

Solid rubber side fenders in steel housings are fitted over the entire length of the vessel, and two 16-ft. lifeboats, mounted in high-level davits, are carried on the boat deck. The new vessel, which has a larger passenger and vehicle carrying capacity than any other in the fleet, will most certainly fulfil a very real need—but perhaps her role is best summarised by the owning company which has described her as "an immediate and practical answer to those who still dream of bridging the Solent."

SOUTHAMPTON, ISLE OF WIGHT AND SOUTH OF ENGLAND ROYAL MAIL STEAM PACKET FLEET ON SOUTHAMPTON—COWES TRADE

	Date built	*Gross tonnage*	*Length ft.*	*Beam ft.*	*Passenger cert.*	*Number of cars*
*Carisbrooke Castle**	1959	620 (approx.)	190	40	1,200	45
Balmoral	1949	688.10	203.5	30	892	10
Vecta	1938	629.75	199.5	24	855	12
Medina†	1931	346.53	143	28.1	650	8
Norris Castle	1944	473.15	180	38.1	254	32

* Now building, due for commissioning May, 1959. † Re-engined and reconstructed in 1954.

★

GAS TURBINE TESTS

(*Continued from page* 11)

capacity of up to 16 engines per week. In addition to testing Dart engines these beds will also be suitable for dealing with the larger Rolls-Royce Tyne which will be used to power the airline's fleet of Vanguards. In the new testplant a single control room will be elevated above the individual engine cells. Provision is already being made for the future installation of equipment needed for the testing of pure jet engines.

With 2,500 men employed at the London base of B.E.A. much thought and effort is being expended on providing the most efficient and economic engineering methods. Further evidence of this policy is the proposed adoption of a radio-controlled travelling crane in the new hangar.

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17½ TONS LEGAL PAYLOAD

London Sales Office: 139 Park Lane, W.1. Tel: Grosvenor 5932 FODENS LIMITED, SANDBACH, CHESHIRE

"O Frederick, why pine for the open road now that we have our own little home at last?"

So frequently did Tabitha surprise him at the casement that she remarked with satisfaction on Frederick's appreciation of the view. "Pshaw" he replied with some ferocity. A sudden jealous thought then pierced her heart, and with wiles and smiles she sought to distract him.

But not for manly Frederick were the cushioned pleasures of the idle rich. She might proffer roses but he yearned for sterner stuff. A more potent liquid occupied his thoughts than her mulled wine. For louder than the songs she sang him was the call of the open road. With bursting heart he remembered his trusty chariot thundering north, the magic fluid coursing through its metal veins. O the power of that fluid!* O his mastery of the wheel!

When next Tabitha cast herself reproachfully at his feet, he cried in frenzy, "Restrain yourself, woman. I would have other wheels than fortune's!"

BP DERV

* The finest quality Derv—BP Derv—is available at Agency sites throughout Britain. With a Shell and BP Derv Agency card your drivers can fill up with BP Derv on credit or for cash at Agency rates. The sign on the right is the sign they should look for.

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(LONDON) Ltd. and (BELFAST) Ltd.

House flag flown by ships of A.C.C.S.

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Forthcoming Events

February 7.—Railway Correspondence and Travel Society (Bristol). Paper by Mr. R. M. Tomkins, "The Claughtons of the L.N.W.R." At Grosvenor Hotel, Bristol, 1.

Stephenson Locomotive Society (Scottish). Paper by Mr. Hogg, "The Work of the Scottish Region Archives." At 302 Buchanan Street, Glasgow. 2.30 p.m.

February 9.—Institute of Transport (Sheffield). Paper by Mr. F. G. Maxwell, "The Operation of the London Transport Executive's Railways." At Royal Victoria Hotel, Sheffield. 6.30 p.m.

Light Railway Transport League. Films by Mr. W. A. Camwell, "British and Irish Tramways." At Exchange and Engineering Centre, Birmingham. 4.15 p.m.

February 10.—Institute of Transport (North Staffs). Paper by Mr. J. W. Tonge, "Highways." At Grand Hotel, Hanley. 6.30 p.m.

Institute of Transport (Yorkshire). Paper by Mr. Charles F. Klapper, "Some Aspects of European Transport." At Griffin Hotel, Leeds. 6.30 p.m.

Permanent Way Institution. Paper by Dr. S. Hulme, "The Industrial Injuries Act." At Railway Institute, York. 6.45 p.m.

Institute of Road Transport Engineers (South Western). Paper by Mr. J. Longword Allen, "The Use of Plastics in Road Transport." At Duke of Cornwall Hotel, Plymouth. 7.30 p.m.

Institute of Road Transport Engineers (Midlands). Paper by Mr. T. G. Charlesworth, "Recent Developments in Fuel Injection Pump Design." At Exchange and Engineering Centre, Stephenson Place, Birmingham. 7.30 p.m.

Electric Railway Society. Paper by Mr. G. C. J. Norris, "The Guernsey Railway." At Exchange and Engineering Centre, Birmingham. 6.45 p.m.

February 11.—Institute of Transport (Southern). Paper by Mr. W. MacGillivray, "Nuclear Propulsion of Merchant Ships." At offices of Harbour Board, Town Quay, Southampton. 5.45 p.m.

Institute of Road Transport Engineers (Southern). Paper by Mr. P. H. Wyke Smith, "Taking Stock on Maintenance." At Royal Star Hotel, Maidstone, Kent. 7.30 p.m.

Light Railway Transport League. Paper by Mr. J. C. Gillham, "The Tramways of Naples." At 153 Drummond Street, N.W.1. 7 p.m.

February 12.—Institute of Transport (South Wales and Mon). Annual dinner and visit of president. At Royal Hotel, Cardiff.

Institution of Railway Signal Engineers (York). Paper by Mr. D. G. Parker, "Colour-light Signalling Principles including the Application of C.T.C." At Signalling School, Toft Green, York. 5.30 p.m.

B.R. (London Midland) Lecture and Debating Society. Paper by Mr. P. Masefield, "Air Transport." At Clerical Staff Dining Club, Cardington Street, Euston. 5.45 p.m.

February 13.—Institute of Road Transport Engineers (South Wales). Paper by Mr. W. E. Hatherill, "Recent Developments in Fuel Injection Pump Design." At The South Wales Institute of Engineers, Park Place, Cardiff. 7 p.m.

Institute of Transport (East Midlands). Paper by Mr. Charles F. Klapper, "European Transport." At Staff Training College, Derby. 6.30 p.m.

Institute of Transport (Northern). Paper by Mr. N. H. Dean, "The P.S.V. Barometer." At Royal Station Hotel, Newcastle upon Tyne. 7 p.m.

North East Coast Institution of Engineers and Shipbuilders. Paper by Mr. J. E. Smith, "The Manufacture of Marine Oil Engines." At Mining Institute, Newcastle upon Tyne. 6.15 p.m.

March 9.—Road Haulage Association (Metropolitan and South Eastern). Annual banquet and ball. At Grosvenor House, W.1.

March 20.—Institute of Transport. Annual dinner. At Dorchester Hotel, London, W.1.

MASTER JIG FOR VEHICLE CABS

Three-Dimensional Type

OUR attention has been called to an ingenious three-dimensional master jig for the production of motor vehicle cabs and roofs. Provisionally patented, the scheme is the invention of Mr. L. A. Temple, who has had considerable experience of commercial vehicle body production.

The development and planning of this jig is directly aimed at production efficiency. It is capable of giving in a matter of minutes interchangeable precision measurements to comply with any size roof-end required. The simplicity of adjustment, or setting-up in readiness for the panel beater from one set of permutated measurements to another in respect of height, width and length, is such that only unskilled labour is required. Thus the normal costly method of individual jig making by skilled labour is rendered obsolete and material and storage space reduced to nothing.

Three-dimensional master jig designed by Mr. L. A. Temple for commercial vehicle cab production

Cost Soon Recovered

This "Universal" jig operates on a precision sliding principle in three directions, using blended radius inserts, as illustrated, calibrated in inches, or to special order. The cab roof comprises two similar jigs, alternate radii being used for front and rear, arranged in parallel, and joined together by two adjustable link-arms. The price of the roof-end jig is estimated to be in the region of £75; in view of the estimated cost of the old method individual jig for every roof (about £7 10s. each), it is clear that this new project would justify itself after the first 10 off.

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L.M.R. FREIGHT PLAN

(*Continued from page* 3)

consequence of the new concentration plan it may be expected that the smaller type of articulated town cartage vehicle will be partially replaced by larger vehicles capable of faster journey times. The cost of longer hauls by road from railhead will be less than trip working of local freight trains.

Containers

Furthermore, a great deal of time and thought is being spent on the development of containers with a good payload and low tare weight. At the other end of the scale, the London Midland Region was responsible for the introduction of the British Railways' Collico small container service. When this began in 1957 there were in June of that year 990 cases in use; by October 1 last year the number on hire had increased to 7,850.

The plan outlined above is probably the most important and far-reaching of its kind ever undertaken on British Railways. It is a short-term, not a long-term, plan and one from which definite results in increased receipts and reduced expenditure are expected to show from this year onward. Overall, a 16-20 per cent return on capital is looked for within the period of the wider B.R. modernisation plan.

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ACRYLIC MOULDING MATERIALS

(*Continued from page* 12)

presence of a few organic chemicals Diakon shows no tendency to craze. Its properties have led to its specification for a wide range of components in the automobile, lighting, and telephone industries. Mouldings of this plastics material are also noteworthy for their appearance. They are distinguished by excellent surface finish, clarity in transparent form, and purity of colour in pigmented form and are therefore widely used for applications where appearance is a main consideration. This attractive appearance will last for a considerable time, whether exposed indoors or out. The pigments and dyes used in manufacture are stable. Parts have been replaced after 10 years' use by new mouldings without a colour difference being detectable.

Although it will burn, its ignition temperature is not so low as to constitute an inflammability hazard. Its electrical properties put it into the class of good insulators, but no outstanding merit can be claimed. The mechanical properties are good, and mechanical failure, which is rare, usually arises from faulty design of mouldings. It is not affected by wetting or by the action of most domestic solvents or cleaning materials, though there are a few which will soften it. The use of Diakon imposes no unusual restrictions on the design of mouldings or their tools.

Applications

The major applications at the moment lie in the motor industry where Diakon is fully established for such components as reflex reflectors, rear lamp housings, instrument dials, horn buttons, and other decorative medallions. Here, the optical properties of the transparent grades, coupled with the inherent dimensional stability and excellent weathering characteristics, are utilised to the full. Examples are illustrated. Other important outlets are the telephone and lighting industries. It has been chosen by the G.P.O. as the material for the new pattern telephone instruments, and is already used by Ericsson Telephones, Limited, for its commercial models.

The National Benzole Co., Limited, announces that, owing to expanding business, the head office will move to new and larger premises at Mercury House, 195 Knightsbridge, London, S.W.7. (Telephone Kensington 4511.)

Why the big operators choose ENERGOL

"—very long mileage between overhauls!"

says **GEORGE READ (TRANSPORT) LTD**

OF MITCHELDEAN GLOS.

Among the tributes to the excellence of BP Energol Automotive Lubricants is this letter from Mr. George Read. " We operate a fleet of 35 vehicles consisting of A.E.C. Mammoth Majors, Leyland Octopus, Albions and others. All these are fuelled and lubricated by your products.

"We would like to testify to the excellent quality of your lubricants with which we have had a completely trouble-free experience. The grades used are BP ENERGOL DIESEL D, BP ENERGOL MOTOR OIL and BP ENERGOL GEAR OIL. Despite the heavy and testing nature of much of our work, proved by the fact that our fleet covers more than a million miles each year, the excellent quality of these oils has enabled us to secure very long mileage between overhauls.

"We are equally content with your fuels and with the service which we receive from you. We trust that our pleasant relationship will continue."

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SOCIAL AND PERSONAL

President of Chamber of Shipping

AT a meeting of council on January 29, Sir Nicholas Cayzer, Bart. (British and Commonwealth Shipping Co., Limited), was nominated as president of the Chamber of Shipping for the ensuing year. Mr. Hugh Hogarth (Hugh Hogarth and Sons, Limited) was nominated as vice-president. The nominations will be submitted to the annual meeting on February 26, when the elections will take place.

* * *

The Locomotive and Allied Manufacturers' Association of Great Britain has reappointed Sir George H. Nelson, Bart., chairman of the English Electric group of companies, president of the Association and Mr. G. T. Owen, managing director, North British Locomotive Co., Limited, chairman for the ensuing year.

* * *

Mr. L. Waller, appointed traffic manager, Ribble Motor Services, Limited, joined the company as a depot clerk at Skipton on leaving Ermysted's Grammar school, Skipton, in 1930. Five years later he was transferred to the joint services section of the ticket audit department at headquarters, Preston, and in 1938 became assistant to the chief statistics officer. In 1945 he was commissioned as a lieutenant in the Royal Indian Navy and served at embarkation headquarters at Bombay. Returning to Ribble after nearly two years' naval service, Mr. Waller was appointed liaison officer attached to the general manager's office. He will take up his new duties as traffic manager on April 1.

Mr. L. Waller

* * *

Colonel Peter Cox, recently chief sales executive of Rawlings Manufacturing Co., Limited, has been appointed sales manager of the company.

* * *

Mr. C. N. MacKay has been appointed public relations and publicity officer, Scottish Region, B.R. He was previously assistant to general manager (public relations).

* * *

Mr. R. H. B. Nicholls, Gloucester divisional superintendent, Western Region, B.R., since 1940, has joined the board of Dowty Hydraulic Units, Limited. The Dowty group is, as readers will be aware, interested in many phases of the railway modernisation plan.

* * *

Mr. R. G. Grout, chairman of the General Steam Navigation Co., Limited, has been elected president of the Institute of Shipping and Forwarding Agents as from the annual meeting on April 29. The new chairman-elect is Mr. G. Brett, of Liverpool, director of Thomas Meadows and Co., Limited.

* * *

Mr. Ian Cameron will take over, on the retirement of Captain G. Villar, C.B.E., R.N.(Retd.), as general manager of the John I. Thornycroft organisation at Southampton, which comprises shipbuilding, engineering and shiprepairing, etc. He was formerly engineer manager in the shipbuilding, shiprepairing and engineering works of Smith's Dock Co., Limited, Middlesbrough.

* * *

Mr. A. M. A. Majendie, M.A., A.F.R.Ae.S., has accepted the invitation of the Minister of Transport and Civil Aviation to join the Air Safety Board. Mr. Majendie has held a number of posts associated with civil aviation, including those of president of the Institute of Navigation, council member of the Air Registration Board and flight captain with B.O.A.C. As such he commanded the world's first scheduled jet passenger service.

* * *

Mr. J. S. Scott, M.I.Mech.E., M.I.Loco.E., hitherto works manager, Gorton locomotive works, has been appointed to the post of works manager, Darlington locomotive works, North Eastern Region, B.R. Mr. Scott received his early technical training with the former Caledonian Railway at St. Rollox works, and at the Royal College of Science and Technology, Glasgow. In 1939, he was appointed works superintendent of the Barassie wagon works, and during the war years was engaged on a Spitfire repairs organisation within the works. In 1948 he became works manager, Cowlairs locomotive works, where he remained until 1951, when he took up an appointment as locomotive works manager (acting), Doncaster. In 1952, he was appointed locomotive works manager, Gorton, and was responsible for completing the building of the Bo-Bo and Co-Co locomotives for the Manchester, Sheffield and Wath electrification scheme.

Mr. J. S. Scott

* * *

Mr. William B. Broadbent, A.M.I.Loco.E., who joined Birfield Industries, Limited, in October last year, has now been appointed to the position of assistant director, railway division. Mr. Broadbent was apprenticed at Crewe, 1942-45, and after subsequent training in the motive power and traffic departments, held appointments at Euston headquarters and a number of motive power depots, including Barrow, Macclesfield, Rhyl, Holyhead, and Rugby, before joining the Mobil Oil Co., Limited, in 1951, as engineer, railway department. He was appointed a director of the Festiniog Railway Company in 1955.

* * *

Sir Gordon Russell, C.B.E., M.C., R.D.I., has decided to retire from the directorship of the Council of Industrial Design on December 31, 1959, when he will be 67 years of age. The Council has accepted this decision with reluctance and with the keenest appreciation of the contribution he has made. He was an original member of the Council when it was set up in 1944 and was appointed its director in 1947. Mr. Paul Reilly, who has been deputy director since 1954, will succeed Sir Gordon. Among the many appointments held by the latter is membership of the design panel of the British Transport Commission.

The Decca Navigator Co., Limited, announces the appointment of Mr. R. J. Mitchell, M.B.E., A.M.I.E.E., as commercial manager, succeeding Mr. H. G. Hawker who was recently appointed to the board of directors.

* * *

Mr. W. T. James, O.B.E., chairman of the Devon General Omnibus and Touring Co., Limited, who was accompanied by Mr. W. M. Dravers, managing director, Mr. R. G. Ellery, director, and Mr. T. L. C. Strange, general manager, recently presented television sets to two members of the staff who had completed 50 years and long-service certificates and badges to nine members of the staff who had completed 25 years' service, at a dinner at Torquay. The number of employees with 25 years' service or more is now approximately 20 per cent of the total staff.

* * *

Mr. Gavin R. Ralston, recently appointed traffic manager of the Manchester Ship Canal Company, was educated at Lancing College and joined a Glasgow firm of Eastern merchants. During the early period of the 1939-45 war he served in Egypt, was seconded to the Royal Engineers on the staff of Movement Control and served as Military Liaison Officer to the Ministry of War Transport in Alexandria and on the general staff at G.H.Q., Cairo, until 1945 in the rank of major. Before being demobilised, Mr. Ralston served for a short period in the War Office. In 1946 he returned to Ceylon to join his old company, James Finlay and Co., Limited, as manager of the shipping and air departments. In 1949 ill-health compelled him to resign this appointment and he returned to the United Kingdom. In March, 1950, Mr. Ralston joined the Manchester Ship Canal Company as assistant traffic manager.

Mr. G. R. Ralston

* * *

We record with regret the death, at the age of 66, of Mr. A. E. Bengry, founder of Primrose Motor Services, the Leominster bus and coach operator.

* * *

Mr. R. G. Grout, chairman of General Steam Navigation Co., Limited, and deputy chairman of Silver City Airways, Limited, has been appointed to the board of British Aviation Services, Limited.

* * *

We regret to record the death, at the age of 68, of Mr. A. J. Chouffot, D.S.M., at the time of his retirement in 1954 divisional superintendent, northwest, Central Road Services, London Transport.

* * *

The London Midland Region announces the following appointments:

Mr. R. D. Lattimer, to be assistant (modernisation) to operating officer, Euston.

Mr. W. E. Millard, to be assistant district goods manager, Manchester.

Mr. T. Windle, to be assistant district goods manager, Bolton.

Mr. D. Ayres, to be assistant district engineer, Crewe.

Mr. L. W. Leppington, to be traffic assistant to divisional traffic manager, Birmingham.

Mr. E. Grundy, to be divisional welfare officer, Derby.

Mr. A. F. Grieve, to be assistant district traffic superintendent (commercial), Barrow.

Mr. F. M. Beddow, to be assistant district traffic superintendent (commercial), Carlisle.

Mr. A. P. Goodman, to be assistant electric traction engineer, Crewe.

Mr. W. T. Stevenson, to be assistant electric traction engineer, Manchester.

Mr. D. Vause, to be assistant electric traction engineer, Liverpool.

Mr. R. H. Trotter, to be assistant to district operating superintendent (staff), Manchester (N).

Mr. H. Huntingdon, to be assistant to district operating superintendent (staff), Manchester (S).

Mr. A. J. Lee, to be assistant to district operating superintendent, Liverpool Central.

* * *

Mr. H. M. Hunter, A.M.Inst.T., appointed assistant (special duties) to the general manager, Scottish Region, B.R., began his railway career with the Glasgow and South Western Railway in 1916. He gained experience at railway stations and in various departments of the commercial manager's office and in the office of the chief officer for Scotland of the L.M.S.R. and was personal clerk to the commercial manager. He served in various sections of the advertising department of the commercial manager's office before his appointment as head of the department in 1947. On nationalisation of the railways in 1948, Mr. Hunter was appointed public relations officer and the following year public relations and publicity officer of the Scottish Region.

Mr. H. M. Hunter

* * *

Mr. A. McVie, B.Sc., A.C.G.I., has been appointed general manager (overseas), Standard Telephones and Cables, Limited.

* * *

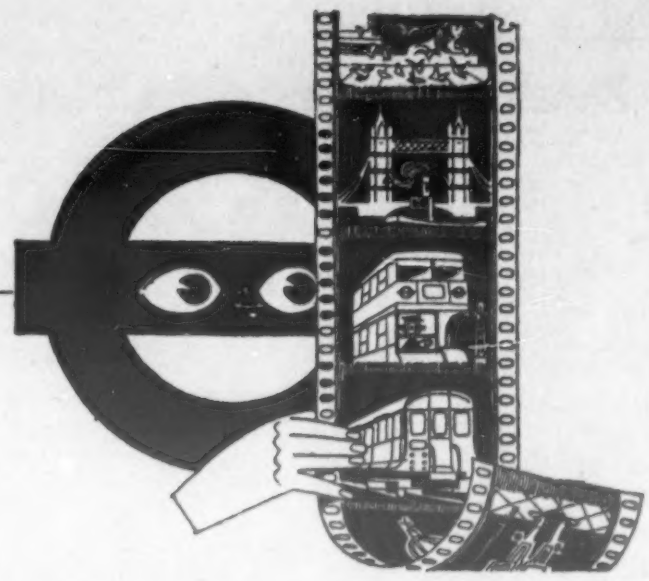
Mr. G. N. Simmons, has been appointed service superintendent of Guy Motors, Limited, at its London depot in Porteous Road, Paddington.

* * *

Of the staff of Maidstone and District Motor Services, Limited, 18 per cent have a record of 25 or more years' service, said the chairman, Mr. R. P. Beddow, C.B.E., at presentations of long-service awards gained during 1958. Four of the staff qualified during the year for 40-year awards and 110 for 25-year awards.

* * *

At the 22nd annual dinner of the Manchester and District Traffic Association in Manchester on January 30 the toast "The Association" was given by the Lord Mayor of Manchester, Alderman J. E. Fitzsimons, who also presented diplomas to the students who had successfully passed the transport diploma course at the Manchester High School of Commerce. The president of the Association, Mr. S. Foulkes (transport superintendent, Carborundum Co., Limited), replied to the toast. The chairman, Mr. H. Heap (traffic manager, Cowburn and Cowpar, Limited), proposed the toast "Our Guests," to which Mr. R. B. Stoker (director of Manchester Liners, Limited) replied. There was an attendance of about 165.



Lantern Lectures

In the series of lantern lectures prepared by London Transport, entertainment has been combined with information so that Londoners can learn something about London and its countryside, as well as the organisation and working of its transport system. It has been found, however, that these lectures are of very considerable interest to people who live in other parts of the country.

There are some 50 illustrations for each lecture and these are sent either as 3¼ in. slides or on a 35 mm. film strip. There is no charge for the loan of the texts or of the slides or film strip; the only expense to the borrower is the return carriage of slides, or the return postage on the film strip.

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IMPORTANT CONTRACTS

More Double-Deckers for Calcutta

ANOTHER 40 Leyland Titan double-deck bus chassis have been ordered by West Bengal State Transport, operator of over 400 Leyland buses in Calcutta. The order has been placed with Ashok Leyland, Limited, of Madras, which is now progressively manufacturing this model in India. The 40 Titans are to be PD2/40 models, 8 ft. wide by 27 ft. long, with synchromesh gearboxes and vacuum-assisted brakes. Of West Bengal's varied Leyland fleet, which includes underfloor-engined Royal Tiger and vertical-engined Leyland Comet single deckers, over 100 are Leyland Titan double-deckers.

Artificial Horizon for Vanguard

Vickers-Armstrongs (Aircraft), Limited, has placed a production order with the aircraft equipment department of Ferranti, Limited, for 20 of the company's 3½-in. standby artificial horizons for use on the Vickers Vanguard. The instrument will be identical with that which already has universal applications, not only in military aircraft, but also in modern civil aircraft such as the Armstrong Whitworth Argosy, Boeing 707-436 and de Havilland Comet 4.

Large Orders for Multi-Bucket Units

Aero Maintenance Equipment, Limited, has announced that orders to the value of £70,000 have recently been placed for Bennes-Marrel multi-bucket hydraulic lifting bodies, including one for a number of the units by the Steel Company of Wales. Readers will recall that in our issue for January 11, 1958, we described the Bennes-Marrel equipment fitted to a Foden FG6/20 chassis when it was demonstrated in London by Aero Maintenance Equipment, Limited, the sole British concessionaire.

North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include:

Fresks Industrial Equipments, Limited, London, for Thermit quick welding equipment.

F. Bode and Son, Limited, Leek, for two electrically operated manipulators for Darlington Locomotive Works.

Wayne Tank and Pump Co., Limited, Bracknell, for dispensing units and meter at Bradford Hammerton Street.

W. P. Butterfield, Limited, Shipley, for oil storage tanks at Bradford Hammerton Street.

E. Davis (Fixers), Limited, York, reconstruction of superstructure of Haverton Hill Bridge No. 4.

Paterson Hughes and Engineering Co., Limited, London, for additional hoist blocks at Dinsdale Rail Welding Depot.

Harbour and General Works, Limited, Wallsend on Tyne, for reconstruction and widening of superstructure Sunderland Bridge No. 255.

Yale and Towne Manufacturing Co., Limited, Wolverhampton, for one fork-lift truck and ancillaries for Hull English Street.

Marconi Direction Finders for Airports

The Ministry of Supply has placed a substantial contract with Marconi's Wireless Telegraph Company for v.h.f. direction finders for use at airports and airfields in the United Kingdom. The equipments, which have been ordered on behalf of the Ministry of Transport and Civil Aviation, will provide a total of 24 channels in the Southern, Northern and Scottish air traffic control centres and at principal airports including Gatwick, Stansted, Blackbushe and Elmdon. London Airport is already equipped with Marconi v.h.f. direction finders.

Fires Extinguished in 1958

The number of pressure charges used in Nu-Swift fire extinguishers and returned during 1958 to the Nu-Swift factory for recharging, was 41,167—an increase on any previous year. This figure concerns only fire fighting in Britain by civilians.

London Midland Region Contracts

The London Midland Region of British Railways has announced the following contracts:

Soil Mechanics, Limited, London, for piling outwards parcel and mail traffic building, Euston Station.

Edward Wood & Sons, Limited, Derby, for new parcels shed, goods depot, Chester General Station.

Boulton and Paul, Limited, London, for steelwork, new forward shed, goods depot, Chester General Station; supply and erection of structural steelwork, new parcels shed, Wavertree, Liverpool; and for supply and erection of structural steelwork, goods depot, Oldham Road, Manchester.

R. G. Horton (Engineers), Limited, Brierley Hill, for new forwarded shed, goods depot, Oldham Road, Manchester.

Redpath Brown and Co., Limited, Manchester, for supply and erection of structural steelwork, new parcels shed goods depot, Oldham Clegg Street.

Norwest Construction Co., Limited, Liverpool, for erection of parcels depot, Oldham Clegg Street.

Richards Structural Steel Co., Limited, Leicester, for supply, fabrication and delivery of girderwork, Bridges 68, 70 and 73, Timperley and Garston line, and Bridges 81 and 84, Speke Junction and Edge Hill line.

Thomas Fletcher and Co., Limited, Mansfield, for second stage of widening of bridge No. 10 carrying A6 trunk road over Trent to Weston line for Ministry of Transport.

Leonard Fairclough, Limited, Adlington, for stage two of alteration to Edgeley Tunnel, Stockport, in connection with main-line electrification.

Jesse Tildesley, Limited, Willenhall, for supply and erection of steelwork for boiler house and turbine room, Derby locomotive and carriage and wagon works.

K. P. Piggott and Co., Southport, for earthwork, drainage, bottom ballasting, new district electric depot and carriage cleaning sidings, Allerton.

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TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

February 16—Pakistan.—Ministry of Communications (Railway Division) for the supply of 120,000 Nos. B.G. and 12,370 Nos. equalling about 62,700 cu. ft. special size hard wood SLEEPERS to North Western Railway from countries other than Pakistan. Tenders to Director, Civil Engineering, Railway Division, Ministry of Communications, Room No. 311, 2nd Floor, Tughlaq House, Shahrah Kamal Ataturk, Karachi. (ESB/1965/59.)

February 17—Pakistan.—International Co-operation Administration (I.C.A.) procurement for one petrol-engined PICK-UP TRUCK, four-wheel drive, with cab and body, minimum specifications: g.v.w. 500 lb., wheelbase 114 in., six-cylinder engine; with spares and accessories. Tenders to Director-General of Supply and Development, Frere Road, Karachi. (ESB/606/59/ICA.)

February 18—Ceylon.—International Co-operation Administration (I.C.A.) procurement for one petrol-engined PLATFORM TRUCK with pole derrick; g.v.w. 16,000 lb. minimum, 130 b.h.p. minimum; derrick to be three-pole type designed to lift 4,000 lb. minimum; complete with accessories. Tenders to the Chairman, Tender Board, Ministry of Transport and Works, Tender No. ICA-207, P.O. Box 547, Colombo 1, Ceylon. (ESB/379/59/ICA.)

SHIPPING AND SHIPBUILDING

Effect of Dublin Dispute

AT the meeting of Dublin Port and Docks Board last week the general manager, Mr. D. A. Hegarty, said the Irish Labour Court had recently sent out proposals for a settlement of the container handling dispute and he was hopeful that a measure of agreement could be reached. An outstanding feature of the dispute was that containers had not in fact been banned at all—they were simply flowing through other ports. This ban had had a very considerable effect on traffic through the Port of Dublin and on employment at the port.

Another member pointed out that Rosslare, Waterford and Larne were all expanding their container traffic while a new container service [the Link Line] had been started between Belfast and Liverpool. Mr. J. Smither said the main bone of contention was in trying to get agreement with the employers about the manner in which they could prevent redundancy arising from container traffic. It was all right to say the workers were cutting off their noses to spite their faces but, he thought, the employers were in the same boat. They were not prepared to come to an agreement to find a way out.

Container Traffic on Heysham Route

NEARLY 11,000 loaded containers have been carried by the B.R. container ships *Enterprise* and *Venturer* since they went into service in April and October respectively. Some 4,000 tons of cargo has also been carried. Their potential capacity is some 400 large containers a week in each direction.

For Irish Service

LAUNCHED recently at Ardrossan Dockyard, the *Dorset Coast*, of Coast Lines, Limited, is expected to operate on the Dagenham—Cork service when she is completed. The new vessel is a motor ship of approximately 1,360 tons deadweight with machinery, crew and accommodation and bridge aft. The ship is divided into five compartments and fitted with the most up-to-date self-contained electric hydraulic deck machinery, with two steel masts and three steel derricks. Her service speed loaded will be 11½ knots. The accommodation for officers and ratings has had special attention and recreation rooms will be provided for both officers and crew. MacGregor single-pull self-closing hatches are a handling feature.

V.H.F. Link in 7,500-Mile Call

AN unusual telephone call was received in the Edinburgh offices of the Ben Line recently. The call was from Captain J. C. Harvey, master of the 12,000-ton cargo passenger ship *Bendoran* a few miles off Singapore—well over 7,500 miles from Edinburgh. The ship is the first of the Ben Line's Far East fleet to be fitted with a Marconi Nautilus v.h.f. radiotelephone, to link with the recently-inaugurated Singapore ship-to-shore v.h.f. link and similar links in other parts of the world. The charge for the conversation was over £1 a minute but it could save the shipping line a considerable sum of money—particularly as a ship costs several hundreds of pounds a day to operate. Captain Harvey spoke to three of the partners owning and managing the line.

Liquefied Gas Tanker

THE *Methane Pioneer*, specially converted tanker for liquefied natural gas, has sailed from Lake Charles, Gulf of Mexico, for England, carrying the first experimental cargo across the Atlantic. The tanker has been converted to carry about 2,000 tons of liquid natural gas, or sufficient for 1,000 homes for about a year—equivalent to about 1 million therms—at minus 258 deg. F. at atmospheric pressure which reduces it to about 1/600th of the space it occupies as a gas. The ship is owned and operated by British Methane, Limited, a company formed by the Gas Council of Great Britain and Constock International Methane, Limited, an American company which has carried out research and development work in this project for a number of years.

She is bound for Canvey Island, at which terminal the North Thames Gas Board has constructed two receiver-tanks into which the liquid natural gas will be unloaded. Each of these tanks will contain 1,000 tons of the liquid natural gas. The liquid will be reconverted to gas under pressure and will then be delivered by direct transmission pipe to the works of the North Thames Gas Board at Romford, where it will be re-formed to town gas.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

British Vacuum Cleaner and Engineering

The directors of the British Vacuum Cleaner and Engineering Co., Limited, recommend a dividend of 7½ per cent on the increased ordinary capital for the year ended September 30 (10 per cent on the old ordinary share capital). Group profit before taxation was £127,672 (£34,345), group profit after all taxation £48,515 (£8,446).

Leyland Motors

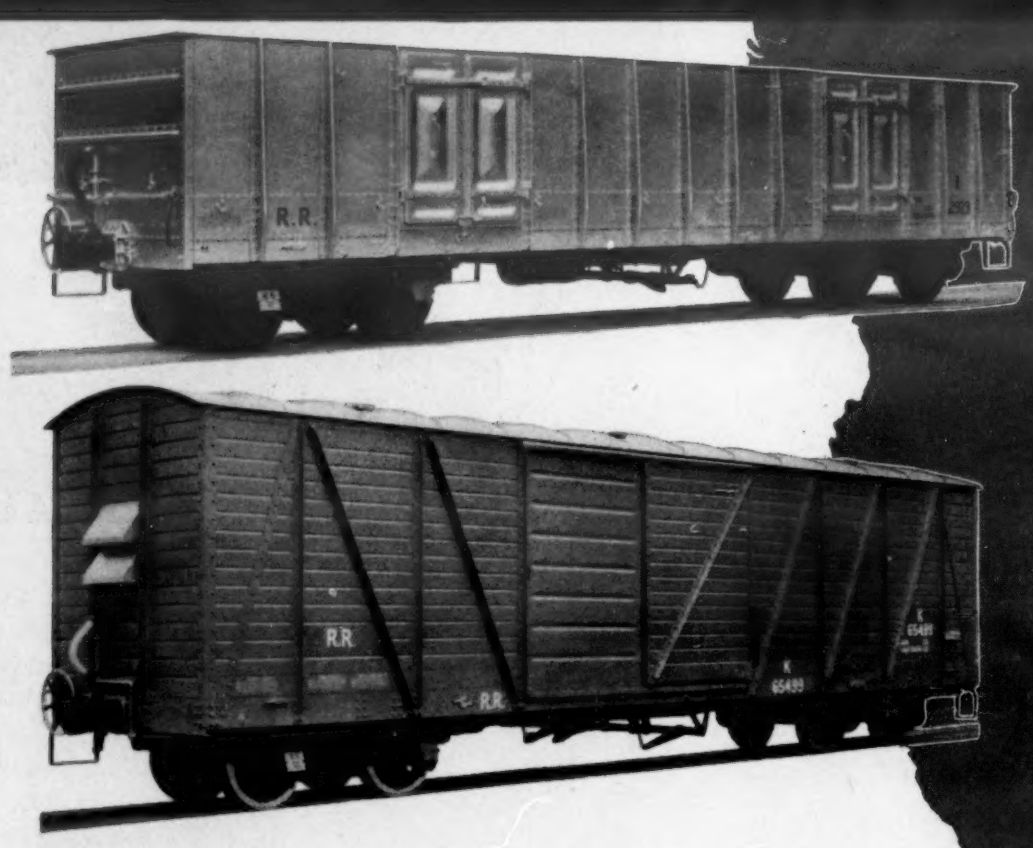
Leyland Motors, Limited, is paying a dividend of 2s. 6d. per £1 ordinary stock unit (same). Group trading profit for year ended September 30, 1958, was £5,937,646 (£6,116,323). Net profit £2,045,745 (£2,222,069) after charging depreciation of £1,228,550 (£1,164,204), profits tax £542,276 (£538,145), income tax £2,237,982 (£2,094,195). Transfer to general reserve £1,275,000 (£1,475,000).

Bristol Siddeley Engines

Following the announcement already made that Hawker Siddeley Group, Limited, and the Bristol Aeroplane Co., Limited, intend to merge the activities of Armstrong Siddeley Motors, Limited, and Bristol Aero-Engines, Limited, details are now published of the pattern of the new organisation. Hawker Siddeley and B.A.C. are now acquiring in equal proportions the whole share capital of Bristol Siddeley Engines, Limited, formed last year as a link between A.S.M. and B.A.E., and B.S.E. in turn is acquiring the complete share capital of A.S.M. and B.A.E. and will take over the whole of the operations of both companies. Bristol Siddeley Engines will also acquire Bristol Cars, Limited.

METRO-CAMMELL

WAGONS FOR RHODESIA



Illustrations show current METRO-CAMMELL production of Bogie Highsided and Covered Wagons for Rhodesia Railways.

METROPOLITAN-CAMMELL CARRIAGE & WAGON CO. LTD.

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